

Front End Loadport
(Single, Standard, Triple, FIFO Buffer)

For AT&S HTB

Standard Online Specification Document

Version 1.0.0

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2 HSMS Messaging

This section describes the HSMS message communication specifications.

Values actually used in the tool are found in the appendix section of this document.

Also, please see separate manual for the procedure to set values.

2.1 Communication Interface

2.1.1 Interface

Ethernet(IEEE802.3)

2.1.2 Connector Model

RJ45 Connector (Female type on equipment side) - Complied with EIA/TIA568A

Hirata provides up to the network board on the tool side. Cables to be prepared by customer.

2.2 TCP/IP Protocol Parameters

2.2.1 Communication Speed

10 Mbps/ 100 Mbps

2.2.2 IP Address and Port

To be specified by customer.

2.2.3 Connecting Method

To be selected from Active mode, Passive mode, or Alternating mode.

2.2.4 Communication Protocol

HSMS-SS will be used.

2.3 HSMS Protocol Parameters

2.3.1 Session ID (Device ID)

Setting value: 0 ~ FFFF (h)

2.3.2 Source ID

To be selected from Unused, Fixed, or Increment Method.

Setting value when it is Fixed: 0 ~ FFFF (h)

2.3.3 Transaction ID

To be selected from Fixed, or Increment Method.

Setting value when it is Fixed: 0 ~ FFFF (h)

2.3.4 Timeout

Parameter	Setting Value	Details
T3 Timeout	1 ~ 120 sec.	Time that waits for a reply.
T5 Timeout	1 ~ 240 sec.	Time that must be elapsed until when it gives another try to connect to a specified remote entity since the previous attempt.
T6 Timeout	1 ~ 240 sec.	Time frame that can keep opening the control transaction before it is determined as a communication failure.
T7 Timeout	1 ~ 240 sec.	Time frame that can keep the TCP/IP connection as “NOT SELECTED” before it is determined as a communication failure.
T8 Timeout	1 ~ 120 sec.	Maximum time period that takes to receive a sequence of bytes of one HSMS message before it is determined as a communication failure.

2.3.5 HSMS Message Format

It complies with the SEMI standard.

2.3.6 HSMS Reject Handling

Supports the Reject.req.

2.3.7 Link Test

Sends a Linktest.req by the link test timer values.

Setting value: 0.1 ~ 86400 sec. (* If “0” is specified, it will not implement the link test.)

2.3.8 Multi-transaction

Supports a multi-transaction for both sender side and receiver side.

Setting value for the number of open transactions on the sender side: 1 ~ 4

Setting value for the number of open transactions on the receiver side: 1 ~ 4

2.3.9 Interleaving

Supports the interleaving (simultaneous multiple transactions) of messaging on sender side and receiver side.

2.3.10 Message Duplication Check

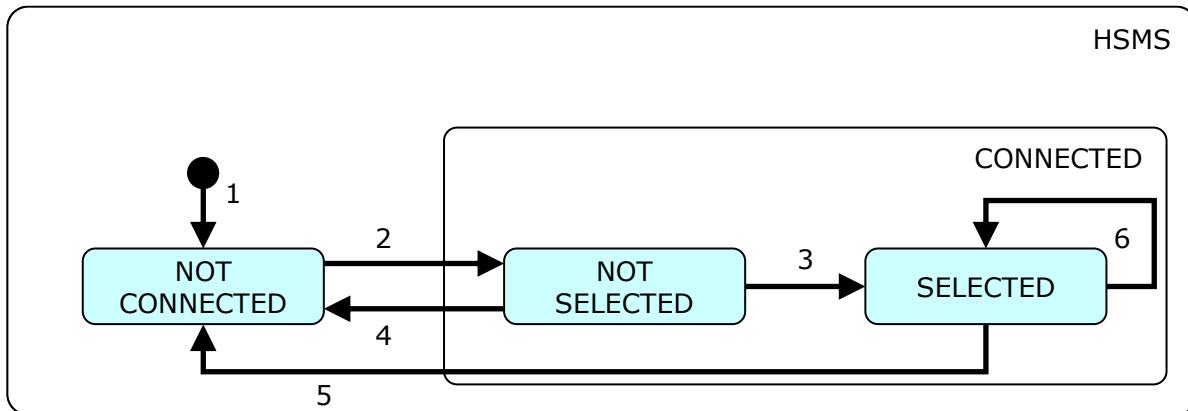
Supports to discard a message if it has the same header as the one that was received with a previously message.

2.4 HSMS Status

2.4.1 Status Definitions

HSMS Status	Status Descriptions
NOT CONNECTED	It is ready for the TCP/IP connections but not yet establish any connections.
CONNECTED	A TCP/IP connection has been established. This state has two substates, “NOT SELECTED” and “SELECTED”.
NOT SELECTED	HSMS session has not been established, or any previously established HSMS session has ended.
SELECTED	At least one HSMS session has been established. This is the normal “operating” state of HSMS: data messages may be exchanged in this state.

2.4.2 State Transition Diagram



2.4.3 State Transition Table

2.4.3.1 In case of Passive mode:

No.	Current State	Trigger	New State	Actions
1	-	System initiated.	NOT CONNECTED	
2	NOT CONNECTED	TCP/IP connection established: 1. TCP/IP accepts successfully.	NOT SELECTED	<ul style="list-style-type: none"> • Start counting for T7 timeout.
3	NOT SELECTED	Successful completion of HSMS Select Procedure: 1. A Select.req is received and permission is determined.	SELECTED	<ul style="list-style-type: none"> • Stop counting for T7 timeout. • Send a Select.rsp when the SelectStatus is “0”.

No.	Current State	Trigger	New State	Actions
4	NOT SELECTED	<p>Failure in HSMS Select Procedure:</p> <ol style="list-style-type: none"> 1. T7 timeout. 2. Receive any other HSMS message than a Select.req. 3. Receive a Select.req but determine to refuse it, and send a Select.rsp whose SelectStatus is not “0”. 4. Receive the HSMS message which length is not 10 bytes. 5. Receive an inappropriate HSMS message header. 6. T8 timeout. 7. Any other TCP/IP errors which cannot be recovered. 	NOT CONNECTED	<ul style="list-style-type: none"> • End the TCP/IP connection.

No.	Current State	Trigger	New State	Actions
5	SELECTED	Successful completion of HSMS connection: 1. Determine to end the HSMS connection, and send a Separate.req. 2. Receive the separate.req. 3. T6 timeout. 4. Receive the HSMS message which length is not 10 bytes. 5. Receive the HSMS message which is longer than maximum length supported by entity. 6. Receive an inappropriate HSMS message header. 7. T8 timeout. 8. Any other TCP/IP errors which cannot be recovered.	NOT CONNECTED	<ul style="list-style-type: none"> • End the TCP/IP connection.
6	SELECTED	T3 timeout	SELECTED	<ul style="list-style-type: none"> • End the data transaction but continue the TCP/IP connection. • Send a S9F9.

2.4.3.2 In case of Active mode:

No.	Current State	Trigger	New State	Actions
1	-	System initiated.	NOT CONNECTED	

No.	Current State	Trigger	New State	Actions
2	NOT CONNECTED	Successful completion of TCP/IP connection: 2. Determine the TCP/IP connection.	NOT SELECTED	<ul style="list-style-type: none"> • Connect the TCP/IP. • Send a Select.req. • Start counting for a T6 timeout.
3	NOT SELECTED	Successful completion of HSMS Select Procedure: 2. Receive a Select.rsp whose SelectStatus is “0”.	SELECTED	<ul style="list-style-type: none"> • Stop counting for a T6 timeout.
4	NOT SELECTED	Failure in HSMS Select Procedure: 1. T6 timeout. 2. Receive a Select.rsp whose SelectStatus is not “0”. 3. Receive the HSMS message which is not a Select.rsp. 4. Receive the HSMS message which length is not 10 bytes. 5. Receive an inappropriate HSMS message header. 6. T8 timeout. 7. Any other TCP/IP errors which cannot be recovered.	NOT CONNECTED	<ul style="list-style-type: none"> • End the TCP/IP connection. • Start counting for a T5 timeout.

No.	Current State	Trigger	New State	Actions
5	SELECTED	Successful completion of HSMS connection: 1. Determine the HSMS connection completion, and send a Separate.req. 2. Receive a Separate.req. 3. T6 time out. 4. Receive the HSMS message which length is not 10 bytes. 5. Receive the HSMS message which is longer than maximum length supported by entity. 6. Receive an inappropriate HSMS message header. 7. T8 timeout 8. Any other TCP/IP errors which cannot be recovered.	NOT CONNECTED	<ul style="list-style-type: none"> • End the TCP/IP connection.
6	SELECTED	T3 timeout	SELECTED	<ul style="list-style-type: none"> • End the data transaction but continue the TCP/IP • Send a S9F9.

3 Standard Compliance Table

3.1 GEM Compliance Table

FUNDAMENTAL GEM REQUIREMENTS	IMPLEMENTED		GEM COMPLIANT	
State Models	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Equipment Processing State	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
S1F13/F14 Auto Connection Scenario Started by Host	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Event Notification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
On-line Identification	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Error Messages	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Control (Operator Initiated)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Documentation	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
ADDITIONAL CAPABILITIES	IMPLEMENTED		GEM COMPLIANT	
Establish Communication	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Dynamic Event Report Configuration	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Variable Data Collection	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Trace Data Collection	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Status Data Collection	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Alarm Management	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Remote Control	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Equipment Constants	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Process Program Management	Process program		Process program	
	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	E42 recipe		E42 recipe	
Material Movement	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	E139 recipe		E139 recipe	
	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Equipment Terminal Service	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Clock	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Limit Monitoring	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Spooling	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Control (Host Initiated)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

* This tool complies with SEMI-E30 0307.

3.2 EPT Compliance Table

FUNDAMENTAL EPT REQUIREMENTS	IMPLEMENTED		EPT COMPLIANT	
EPT State Models for Equipment	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
EPT State Models for Modules	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
EPTTracker Object	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
EPT Events	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

PP- This tool complies with SEMI-E116 0706.

4 State Models

4.1 GEM

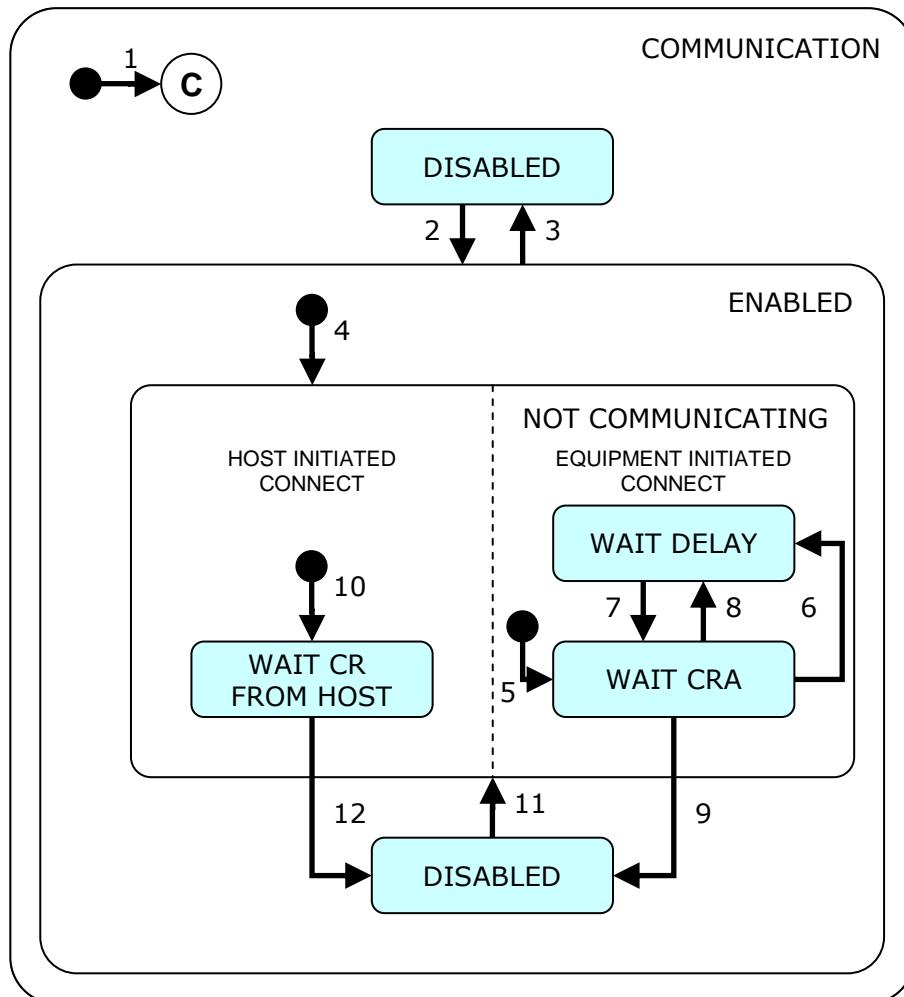
4.1.1 Communication State

4.1.1.1 State Definitions

Communication State	State Details
DISABLED	In this state SEC-II communication with a host is non-existent. If the operator switches from ENABLED to DISABLED, all SECS-II communications must cease immediately. Any messages queued to send shall be discarded, and all further action on any open transactions and conversations shall be terminated.
ENABLED	The equipment attempts to establish communications. The determination whether the host is currently communicating with the host or not is made by what substate it currently is in. Whenever communications are enabled, either during system initialization or through host, the substate of NOT COMMUNICATING is active until communications are formally established.
NOT COMMUNICATING	No message other than S1, F13, F14. And S9Fx shall be sent while this substate is active. The equipment shall discard any messages received from the host other than S1.F13 or F14. It shall also periodically attempt to establish communication with a host computer by issuing an S1,F13 until communications are successfully established. However, only one equipment-initiated S1,F13 transaction may be open at any time. The NOT COMMUNICATING state has two AND substates.
EQUIPMENT INITIATED CONNECT	Upon an entry to the NOT COMMUNICATING state, whenever EQUIPMENT-INITIATED CONNECT first becomes active, a transition to WAIT CRA occurs, the CommDELAY timer is set to “expired” and an immediate attempt to send S1.F13 is made.
WAIT CRA	S1,F13 has been sent. The equipment waits for the host to return S1,F14.
WAIT DELAY	A connection transaction failure has occurred. The CommDelay timer has been initialized. The equipment waits for the timer to expire.

Communication State		State Details
HOST INITIATED CONNECT	WAIT CR FROM HOST	This state describes the behavior of the equipment in response to a host-initiated S1,F13 while NOT COMMUNICATING is active. The equipment waits for S1,F13 from a host. Once S1,F13 is received, the equipment sends the S1,F13 with a value “0” for COMMACK.
	COMMUNICATING	Communications is successfully established. The equipment can receive any messages from a host including S1,F13. This status continues until the communication is “Disabled” or “Lost”.

4.1.1.2 State Transition Diagram



4.1.1.3 State Transition Table

No.	Current State	Trigger	New State	Action
1	(Entry to COMMUNICATIONS)	System initialization	System Default	<ul style="list-style-type: none"> Transition to the setting obeys the system default.
2	DISABLED	Operator enables the communication.	ENABLED	
3	ENABLED	Operator disables the communication.	DISABLED	
4	(Entry to ENABLED)	Entry to ENABLED.	NOT COMMUNICATING	
5	(Entry to EQUIPMENT INITIATED CONNECT)	Entry to NOT COMMUNICATING.	WAIT CRA	<ul style="list-style-type: none"> Send the S1F13.
6	WAIT CRA	Failure in communication transaction	WAIT DELAY	<ul style="list-style-type: none"> Initialize the communication delay timer.
7	WAIT DELAY	Communication delay timer has been expired.	WAIT CRA	<ul style="list-style-type: none"> Send the S1F13.
8	WAIT DELAY	Received the message other than S1F13.	WAIT CRA	<ul style="list-style-type: none"> Send the S1F13.
9	WAIT CRA	Received S1F14.	COMMUNICATING	
10	(Entry to HOST INITIATED CONNECT)	Entry to NOT COMMUNICATING.	WAIT CR FROM HOST	<ul style="list-style-type: none"> Waiting for S1F13 from the host.
11	COMMUNICATING	Communication lost (NOT CONNEC in HSMS, or T6 timeout detected)	NOT COMMUNICATING	
12	WAIT CR FROM HOST	Received S1F13	COMMUNICATING	<ul style="list-style-type: none"> Send the S1F14.

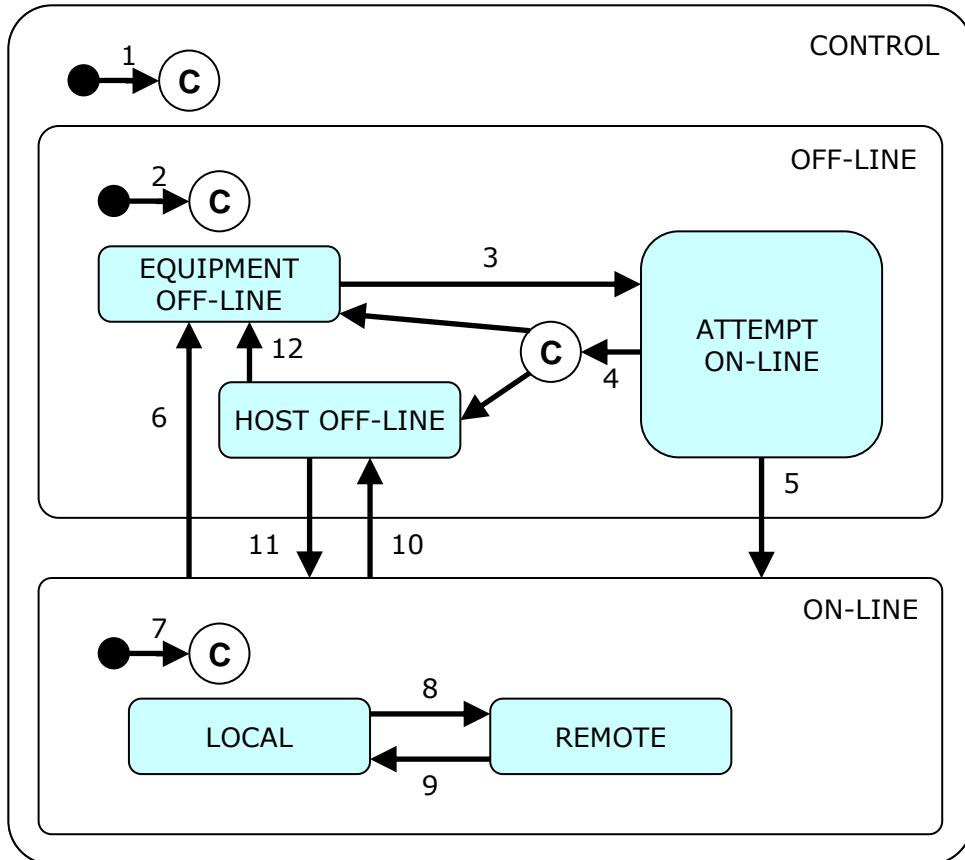
4.1.2 Control State

4.1.2.1 State Definitions

Control State	State Details
OFF-LINE	<p>1. When the OFF-LINE State is active, operation of the equipment is only performed by the operator at the operator console. Message transmission is still available in offline but usage of messages for atomization are severely restricted. While the OFF-LINE State is active, equipment only replies in response to S1, F13, or S1, F17.</p> <p>2. The equipment will respond with an Sx, F0 to any primary message from the host other than S1, F13 or S1, F17. It will process and respond to S1, F13 (establishment of communications) and S1, F17 (host request to activate the ON-LINE State).</p> <p>The equipment will accept the S1, F17 and send a positive response only when the HOST OFF-LINE state is active.</p> <p>3. While the OFF-LINE State is active, the equipment will not send any primary messages other than S1, F13, S9, Fx, and S1, F1. If the equipment receives a reply message from the host other than S1, F14 or S1, F2, this message is discarded.</p>
EQUIPMENT OFF-LINE	While this state is active, the system maintains the OFF-LINE State. It awaits operator instructions to attempt to go ON-LINE.
ATTEMPT ON-LINE	<p>1. While the ATTEMPT ON-LINE State is active, the equipment has responded to an operator instruction to attempt to go to the ON-LINE State. Upon activating this state, the equipment attempts to send an S1, F1 to the host.</p> <p>2. Note that when this state is active, the system does not respond to operator actuation of either the ON-LINE or the OFF-LINE switch.</p>

Control State		State Details
	HOST OFF-LINE	<p>While the HOST OFF-LINE state is active, the operator's intent is that the equipment be ON-LINE. However, the host has not agreed. Entry to this state may be:</p> <ol style="list-style-type: none"> 1. Failed attempt to go ON-LINE 2. The host's request that the equipment go OFF-LINE from ON-LINE 3. Set as initial state. <p>While this state is active, the equipment positively responds to any host's request to go ON-LINE (S1, F17). Such a request is denied when the HOST OFF-LINE State is not active.</p>
	ON-LINE	<p>While the ON-LINE State is active, SECS-II messages may be exchanged and active. Host has the following capabilities when the online state is active.</p> <ol style="list-style-type: none"> 1. Host can set the equipment to automate reporting of data including alarms and events, Host will receive such report in timely manner. 2. Host can request the data such as status data, equipment constants, event reports, and alarms from the equipment. 3. Equipment can execute the terminal service which is defined in GEM.
	LOCAL	<p>Operation of the equipment is implemented by direct action of an operator. All operation commands are available for input at the local operator console of the equipment. Host has the following capabilities and restrictions when the Local state is active.</p> <ol style="list-style-type: none"> 1. The host is forbidden to use any remote commands which may start physical movement or process. While in process, the host cannot use any remote command which may affect the process. 2. While in process, the host cannot edit the equipment constants which may affect the process. The host is allowed to change any other equipment variables. While not in any process, the host can edit all equipment constants that are available.
	REMOTE	Host can operate the equipment via remote commands. Some operations such as process start are restricted for operator.

4.1.2.2 Status Transition Diagram



4.1.2.3 State Transition Table

No.	Current State	Trigger	New State	Action
1	(Undefined)	System initiated.	CONTROL	<ul style="list-style-type: none"> State transits according to the system default setting.
2	(Undefined)	Entry into offline.	OFF-LINE	<ul style="list-style-type: none"> Substate transits according to the system default setting.
3	EQUIPMENT OFF-LINE	Operator switches over to the online.	ATTEMPT ON-LINE	<ul style="list-style-type: none"> Send the S1,F1.

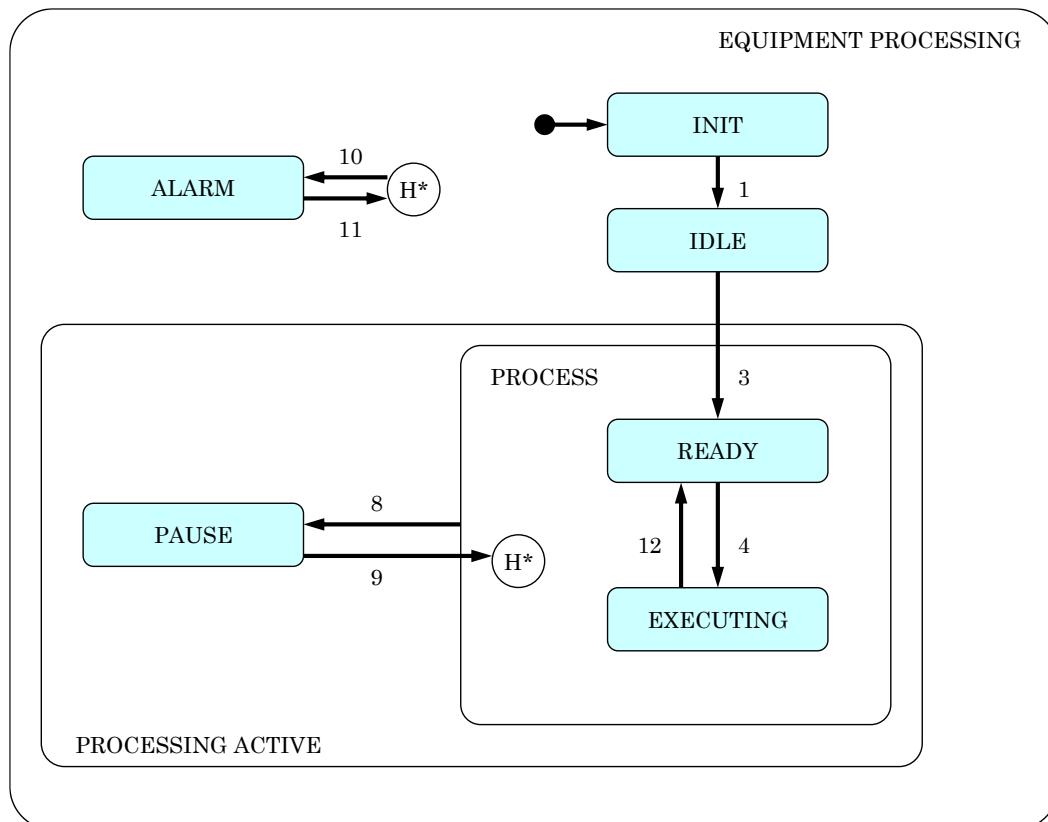
No.	Current State	Trigger	New State	Action
4	ATTEMPT ON-LINE	Received S1, F0.	EQUIPMENT OFF-LINE, or HOST OFF-LINE	
5	ATTEMPT ON-LINE	Received S1, F2.	ON-LINE	<ul style="list-style-type: none"> • Send the S6F11 of the GemControlStat eLOCAL, or GemControlStat eREMOTE.
6	ON-LINE	Operator switches to Offline.	EQUIPMENT OFF-LINE	<ul style="list-style-type: none"> • Send the S6F11 of the GemEquipment OFFLINE.
7	(Undefined)	Entry on ON_LINE state	ON-LINE	
8	LOCAL	Operator sets switch to REMOTE, or equipment received a remote command from host.	REMOTE	<ul style="list-style-type: none"> • Send the S6F11 of the GemControlStat eREMOTE.
9	REMOTE	Operator sets switch to LOCAL, or equipment received a remote command from host.	LOCAL	<ul style="list-style-type: none"> • Send the S6F11 of the GemControlStat eLOCAL
10	ON-LINE	Equipment accepts “Set OFF-LINE” message from host (S1, F15).	HOST OFF-LINE	
11	HOST OFF-LINE	Received S1F17 when the tool processing state is not INIT.	ON-LINE	<ul style="list-style-type: none"> • Send the S6F11 of the GemControlStat eLOCAL or GemControlStat eREMOTE.
12	HOST OFF-LINE	Operator actuated OFF-LINE switch.	EQUIPMENT OFF-LINE	

4.1.3 Equipment Processing State

4.1.3.1 State Definition

Equipment Processing State	State Details
INIT	Right after the equipment is started. It is in the middle of initialization.
IDLE	Equipment is initialized and awaiting for the host or operator to select a process program.
PROCESSING ACTIVE	Equipment is executing the process or paused.
PROCESS	Equipment is executing the process.
READY	Equipment is waiting for the process to start.
EXECUTING	Equipment is executing a process by the START remote command, or executing a process by the operation.
PAUSE	The current process is paused, or in the middle of pausing.
ALARM	Equipment has an alarm or error.

4.1.3.2 State Transition Diagram



4.1.3.3 State Transition table

No.	Current State	Trigger	New state	Action
1	INIT	All equipment initialization is complete with no alarms or error conditions.	IDLE	<ul style="list-style-type: none"> • Update the state variables, previous ProcessState. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStat eChange.
3	IDLE	PP-SELECT remote command was received from the host, or a process program was selected by operator.	READY	<ul style="list-style-type: none"> • Update the state variables, previous ProcessState. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStat eChange.
4	READY	A START remote command was received from the host, or magazine to start was selected by operator.	EXECUTING	<ul style="list-style-type: none"> • Update the state variables, previous ProcessState. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStat eChange.

No.	Current State	Trigger	New state	Action
8	PROCESS	A PAUSE remote command was received from the host, or PAUSE was instructed by operator.	PAUSE	<ul style="list-style-type: none"> • Update the state variables, previous ProcessState. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStat eChange.
9	PAUSE	A RESUME remote command was received from the host, or RESUME was instructed by operator.	Previous state	<ul style="list-style-type: none"> • Update the state variables, PreviousProcess State. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStat eChange.
10	Process state preceding an alarm	Equipment has an alarm or error condition.	ALARM	<ul style="list-style-type: none"> • Update the state variables, PreviousProcess State. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStat eChange.

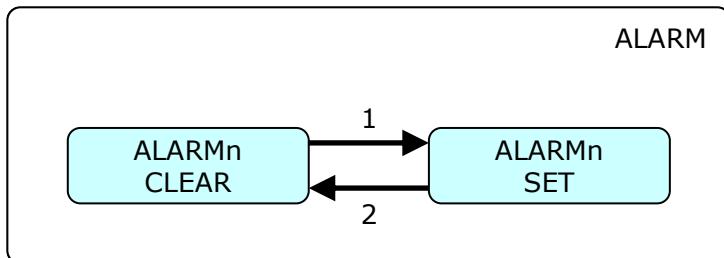
No.	Current State	Trigger	New state	Action
11	ALARM	All alarm or error conditions within the equipment are cleared.	Previous state	<ul style="list-style-type: none"> • Update the state variables, PreviousProcessState. • Update the state variables, ProcessState. • Send the S6F11 of the GemProcessStateChange.
12	EXECUTING	<p>Finished processing the magazine.</p> <p>A STOP command was received from the host and a processing magazine was completed.</p> <p>A ABORT command was received from the host and a processing magazine was completed.</p> <p>And there is magazine waiting for processing.</p>	READY	<ul style="list-style-type: none"> • Update the state variables, PreviousProcessState. • Update the state variables, ProcessState. <p>Send the S6F11 of the GemProcessState Change.</p>

4.1.4 Alarm State

4.1.4.1 State definition

Alarm State	State Details
ALARMn CLEAR	The alarm n is inactive.
ALARMn SET	The alarm n is active.

4.1.4.2 State Transition Diagram



4.1.4.3 State Transition Table

No.	Current State	Trigger	New State	Action
1	ALARMn CLEAR	ALARM _n is detected on the equipment.	ALARMn SET	<ul style="list-style-type: none"> • Initiate local actions (if any) to ensure safety. • Update state variables and AlarmsSet. • Send S5F1 if enabled. • Send S6F11 of AlarmClear is enabled.
2	ALARMn SET	ALARM _n is no longer detected on the equipment.	ALARMn CLEAR	<ul style="list-style-type: none"> • Update state variables and AlarmsSet. • Send S5F1 if enabled. • Send S6F11 of AlarmSet is enabled.

4.2 EPT

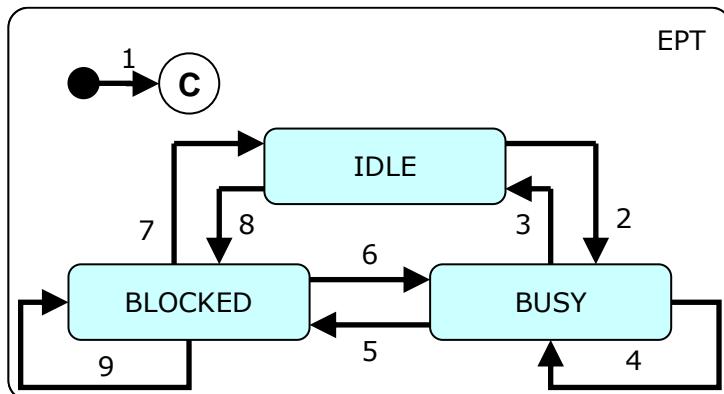
4.2.1 EPT State

4.2.1.1 States Definition

EPT State	State Details
IDLE	<p>In the state of IDLE for both equipment and module, below conditions can exist.</p> <ul style="list-style-type: none"> • Equipment or module is maintaining its environmental requirement and monitoring.
Equipment	<p>For the equipment to be in IDLE state, below condition is necessary.</p> <ul style="list-style-type: none"> • Process Program has not been selected. • All EPT modules in the equipment are in IDLE state.
Module	<p>For the module to be in IDLE state, below conditions are necessary.</p> <ul style="list-style-type: none"> • Modules do not have any materials • Module is not executing any task. • No fault conditions prevent the equipment from starting a new task.
BUSY	<p>Below condition can exist if both the equipment and the module are BUSY state.</p> <ul style="list-style-type: none"> • Material is present.
Equipment	<p>For the equipment to be in BUSY state, below condition is necessary.</p> <ul style="list-style-type: none"> • Process Program has been selected.
Module	<p>For the module to be in BUSY state, below condition is necessary.</p> <ul style="list-style-type: none"> • The module is executing a task, and also no fault conditions prevent the module from executing a task.
BLOCKED	<p>For both equipment and module in BLOCKED state, below condition can exist.</p> <ul style="list-style-type: none"> • Material is present.
Equipment	<p>For the equipment to be in BLOCKED state, below condition is necessary.</p> <ul style="list-style-type: none"> • Equipment Processing State is in PAUSE state. • At least one module is in BLOCKED state, and no EPT module that is in BLOCKED state.

EPT State		State Details
	Module	<p>For the module to be in BLOCKED state, any of below (can be more than one) conditions is/ are necessary.</p> <ul style="list-style-type: none"> • There is a condition which is preventing a module from continuing, or starting the process (Conditions within the equipment are exceptional. The condition within the equipment which prevents the process to be started is IDLE.) • Fault condition which prevents the module from completing a task is present. • Fault condition which prevents the module from starting a task is present. • Module is paused by a PAUSE instruction. • Module is stopped by a STOP instruction. • Module is paused for executing a task and waiting for a RESUME instruction. • Module has failed in initializing in the startup process.

4.2.1.2 Status Transition Diagram



4.2.1.3 Status Transition Table

(Equipment Level)

No.	Current State	Trigger	New State	Action
1	(Undefined)	Equipment initialization is complete (including the EPT module initialization)	IDLE or BLOCKED	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0.

No.	Current State	Trigger	New State	Action
2	IDLE	Process Program has been selected.	BUSY	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0.
3	BUSY	Any EPT module transitions to IDLE. [AND] All processing materials are removed from the equipment. And, the selection of Process Program has been released.	IDLE	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0
4	BUSY	An EPT module that was already BUSY transitions again to BUSY. [OR] Any EPT module transitions to BUSY when at least one other EPT module was already BUSY.	BUSY	<ul style="list-style-type: none"> • When equipment cannot continue processing because of the thing that material is not supplied, send the S6F11 of the EPTStateChangee.
5	BUSY	At least one EPT module transitions from BUSY to BLOCKED when no other EPT modules are BUSY. [OR] At least one EPT module is already BLOCKED, when all other EPT modules transition from BUSY to IDLE.	BLOCKED	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0.

No.	Current State	Trigger	New State	Action
6	BLOCKED	At least one EPT module transitions from BLOCKED to BUSY. [OR] At least one EPT module transitions from IDLE to BUSY.	BUSY	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0.
7	BLOCKED	All EPT modules that were BLOCKED have transitioned to IDLE [AND] No EPT modules are BUSY	IDLE	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0.
8	IDLE	Any EPT module that was IDLE transitions to BLOCKED	BLOCKED	<ul style="list-style-type: none"> • Send the S6F11 of the EPTStateChange0.
9	BLOCKED	An EPT module that was already BLOCKED transitions again to BLOCKED [OR] Any EPT module transitions to BLOCKED when at least one other EPT module was already BLOCKED [OR] Any EPT module transitions to IDLE when at least one other EPT module was already BLOCKED	BLOCKED	

(Module Level)

No.	Current State	Trigger	New State	Action
1	(Undefined)	EPT initialization is complete.	IDLE, or BLOCKED	

No.	Current State	Trigger	New State	Action
2	IDLE	EPT module starts executing a new task.	BUSY	
3	BUSY	EPT module finishes executing a task. [AND] Processed materials are removed from the EPT module. However, if the downstream process is one of the modules within the equipment, it still transitions even if there is a processing material.	IDLE	
4	BUSY	EPT Module starts execution of a new task upon the normal completion of the previous task.	BUSY	
5	BUSY	Received a command to pause the EPT module. [OR] Received a command to cancel the EPT module. [OR] Fault condition which prevents the EPT module from executing a task occurs.	BLOCKED	

No.	Current State	Trigger	New State	Action
6	BLOCKED	All faults that prevent the EPT module from executing a task have been cleared and the EPT module resumes a task. [OR] EPT module starts executing a new task. [OR] EPT module receives a command to resume a task.	BUSY	
7	BLOCKED	All faults that prevent the EPT module from executing a task have been cleared. [AND] All materials are removed from the EPT module. [AND] EPT module can start the new task. However, if the downstream process is one of the modules within the equipment, it still transitions even if there is a processing material.	IDLE	

No.	Current State	Trigger	New State	Action
8	IDLE	<p>Material has arrived at the EPT module but the EPT module is not able to execute the task for the material.</p> <p>[OR]</p> <p>Fault which prevents the EPT module from executing a new task occurs. However, if the material is waiting for other module to complete its task, the state remains IDLE.</p>	BLOCKED	
9	BLOCKED	<p>EPT module cannot resume the task which was blocked.</p> <p>[OR]</p> <p>Fault condition which prevents the EPT module from executing a new task occurs.</p>	BLOCKED	

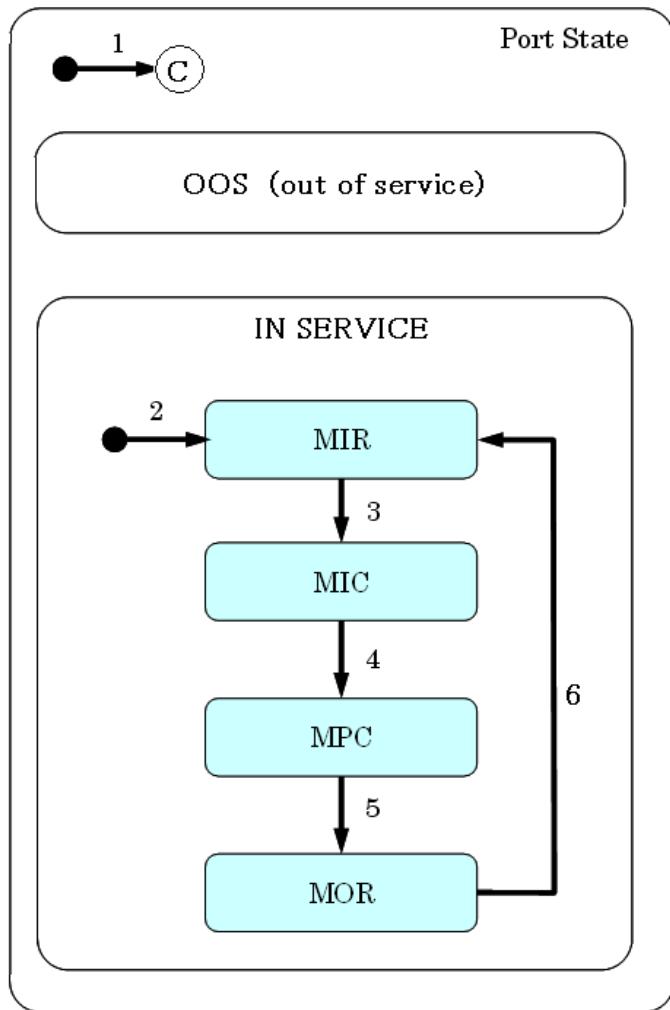
4.3 Equipment Inherent

4.3.1 Port State

4.3.1.1 States Definition

Port State	State Details
MIR	Ready to load the magazine onto the port.
MIC	The magazine has been loaded onto the port. (The shutter has opened, and the magazine has been locked.)
MPC	Mapping (presence check of panels) has been completed.
MOR	Ready to unload the magazine from the port. (The shutter has closed, and the magazine has been unlocked.)
OOS	Out of service. (port is not present.)

4.3.1.2 Status Transition Diagram



4.3.1.3 Status Transition Table

No.	Current State	Trigger	New State	Action
1	(Undefined)	Port1 is INSERVICE When Port2 is present, Port2 is INSERVICE. When Port2 is not present, Port2 is considered as OOS (out of service). When Port3 is present, Port3 is INSERVICE. When Port3 is not present, Port3 is considered as OOS (out of service).	INSERVICE or OOS	

No.	Current State	Trigger	New State	Action
2	INSERVICE	Equipment initialization is complete.	MIR	<ul style="list-style-type: none"> • Send the S6F11 of the PortStatusChange.
3	MIR	The magazine has been loaded onto the port.	MIC	<ul style="list-style-type: none"> • Send the S6F11 of the PortStatusChange.
4	MIC	Mapping has been completed.	MPC	<ul style="list-style-type: none"> • Send the S6F11 of the PortStatusChange.
5	MPC	The processing of the magazine ended.	MOR	<ul style="list-style-type: none"> • Send the S6F11 of the PortStatusChange.
6	MOR	The magazine has been unloaded from the port, and ready to load the magazine onto the port.	MIR	<ul style="list-style-type: none"> • Send the S6F11 of the PortStatusChange.

4.3.2 EPT State

4.3.2.1 Status Transition Trigger

(Equipment)

No.	Current State	Trigger	New State	Action
1	No State	EPT module initialization complete	IDLE	
2	IDLE	Timing when magazine is placed onto loadport stage and shutter opening is ready for start	BUSY	Start Shutter-Open motion
3	BUSY	STOP commands are accepted at both magazine port stages and both stages state are “MOR” (Magazines are on 2 stages)	IDLE	Send STOP commands to stage 1 and 2 and Shutter-Close motions start

No.	Current State	Trigger	New State	Action
4	BUSY	1. Alarm occurred 2. PAUSE was sent from HC or PAUSE button was press by OpCommand through HMI 3. Auto Operation is stopped during command execution	BUSY	Mapping motion is completed. Command is executing.
5	BUSY	1. Alarm occurred. 2. PAUSE was sent from HC or PAUSE button was press by OpCommand through HMI. 3. Auto Operation is stopped during command execution.	BLOCKED	1. Alarm occurrence. 2. PAUSE Command is accepted and stream is PAUSE state. 3. Auto Operation is stopped during command execution.
6	BLOCKED	1. All alarms are cleared. 2. RESUME Command was sent from HC or RESUME button was pressed by Op Command through HMI. 3. Auto Operation is started during command execution.	BUSY	1. Alarm is cleared and re-start executing command. 2. Motion is started from PAUSE state. 3. Auto operation is started and executing command is re-started.
7	BLOCKED	Alarm occurred at No Command state, and all alarms are cleared state	IDLE	All alarms were cleared and transiting to IDLE state
8	IDLE	Loadport stage state is “MIR” or “MOR” and alarming in No Command state	BLOCKED	Alarm occurrence
9	BLOCKED	1. Alarm is not cleared state. 2. Re-start is not available from PAUSE state.	BLOCKED	Continuing alarm is not cleared state.

4.3.2.2 Scenarios

(LOADSTART) LOADSTART command is executed with 1 magazine.

<i>Event</i>	<i>Description</i>	<i>EPT State(E116)</i>	<i>Task Type</i> °	<i>Task Name Description</i>
1	No magazine on Port 1 and Port 2	IDLE	NO TASK	WAITING
2	Load magazine onto Port 1	BUSY	SUPPORT	MAGAZINE MAPPING
3	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
4	Execute LOADSTART command	BUSY	PROCESS	PREPARING FOR TRANSFER
5	Start panel transfer	BUSY	PROCESS	PANEL TRANSFER FROM MAG
6	Read ID	BUSY	PROCESS	PANEL READ
7	Move to down stream panel handoff position and waiting for panel handoff	BUSY	WAIT	WAITING SMEMA
8	Start panel handoff to down stream tool	BUSY	PROCESS	PANEL TRANSFER TO TOOL
9	LoadedToToolCompleted	BUSY	WAIT	PANEL TRANSFERRED

10	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
11	Execute STOP Command	BUSY	WAIT	ENDING TASK
12	Port 1 State "MOR"	IDLE	NO TASK	WAITING

(LOADSTART) LOADSTART command is executed with 2 magazines.

Event	Description	EPT State(E116)	Task Type [°]	Task Name Description
1	No magazine on Port 1 and Port 2	IDLE	NO TASK	WAITING
2	Load magazine onto Port 1	BUSY	SUPPORT	MAGAZINE MAPPING
3	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
4	Load magazine onto Port 2	BUSY	SUPPORT	MAGAZINE MAPPING
5	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
6	Execute Port 1-LOADSTART	BUSY	PROCESS	PREPARING FOR TRANSFER

7	Execute Port 2-LOADSTART	BUSY	PROCESS	PREPARING FOR TRANSFER
8	Start panel transfer	BUSY	PROCESS	PANEL TRANSFER FROM MAG
9	Read ID	BUSY	PROCESS	PANEL READ
10	Move to down stream panel handoff position and waiting for panel handoff	BUSY	WAIT	WAITING SMEMA
11	Start panel handoff to down stream tool	BUSY	PROCESS	PANEL TRANSFER TO TOOL
12	Port1-LoadedToToolCompleted	BUSY	PROCESS	PANEL TRANSFERRED
13	Port2-LoadedToToolCompleted	BUSY	WAIT	PANEL TRANSFERRED
14	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
15	Execute Port 1-STOP command	BUSY	WAIT	ENDING TASK
16	Port 1 State “MOR”	BUSY	WAIT	WAITING HOST COMMAND
17	Execute Port 2-STOP command	BUSY	WAIT	ENDING TASK
18	Port 2 State “MOR”	IDLE	NO TASK	WAITING

(UNLOADSTART) UNLOADSTART command is executed with 1 magazine.

<i>Event</i>	<i>Description</i>	<i>EPT State(E116)</i>	<i>Task Type</i> °	<i>Task Name Description</i>
1	No magazine on Port 1 and Port 2	IDLE	NO TASK	WAITING
2	Load magazine onto Port 1	BUSY	SUPPORT	MAGAZINE MAPPING
3	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
4	Execute Port 1-UNLOADSTART command	BUSY	PROCESS	PREPARING FOR TRANSFER
5	Move to panel handoff position to up stream tool	BUSY	PROCESS	POSITION FROM TOOL
6	Waiting state for panel handoff to up stream tool	BUSY	WAIT	WAITING SMEMA
7	Start panel handoff to up stream tool	BUSY	PROCESS	PANEL TRANSFER FROM TOOL
8	Read ID	BUSY	PROCESS	PANEL READ
9	Transfer panel TO Port 1 magazine	BUSY	PROCESS	PANEL TRANSFER TO MAG
10	Port1-UnloadedFromToolComplete	BUSY	WAIT	PANEL TRANSFERRED
11	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
12	Execute Port 1-STOP command	BUSY	WAIT	ENDING TASK
13	Port 1 State “MOR”	IDLE	NO TASK	WAITING

(UNLOADSTART) UNLOADSTART command is executed with 2 magazines.

<i>Event</i>	<i>Description</i>	<i>EPT State(E116)</i>	<i>Task Type</i> °	<i>Task Name Description</i>
1	No magazine on Port 1 and Port 2	IDLE	NO TASK	WAITING
2	Load magazine onto Port 1	BUSY	SUPPORT	MAGAZINE MAPPING
3	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
4	Load magazine onto Port 2	BUSY	SUPPORT	MAGAZINE MAPPING
5	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
6	Execute Port 1-UNLOADSTART command	BUSY	PROCESS	PREPARING FOR TRANSFER
7	Execute Port 2-UNLOADSTART command	BUSY	PROCESS	PREPARING FOR TRANSFER
8	Move to panel handoff position to up stream tool	BUSY	PROCESS	POSITION FROM TOOL
9	Waiting state for panel handoff to up stream tool	BUSY	WAIT	WAITING SMEMA
10	Start panel handoff to up stream tool	BUSY	PROCESS	PANEL TRANSFER FROM TOOL
11	Read ID	BUSY	PROCESS	PANEL READ
12	Transfer panel to Port 1	BUSY	PROCESS	PANEL TRANSFER TO MAG
13	Port 1-UnloadedFromToolComplete	BUSY	WAIT	PANEL TRANSFERRED

14	Move to panel handoff position to up stream tool	BUSY	PROCESS	POSITION FROM TOOL
15	Waiting state for panel handoff to up stream tool	BUSY	WAIT	WAITING SMEMA
16	Start panel handoff to up stream tool	BUSY	PROCESS	PANEL TRANSFER FROM TOOL
17	Read ID	BUSY	PROCESS	PANEL READ
18	Transfer panel to Port2.	BUSY	PROCESS	PANEL TRANSFER TO MAG
19	Port2-UnloadedFromToolComplete	BUSY	WAIT	PANEL TRANSFERRED
20	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
21	Execute Port 1-STOP command	BUSY	WAIT	ENDING TASK
22	Port 1 State "MOR"	BUSY	WAIT	WAITING HOST COMMAND
23	Execute Port 2-STOP command	BUSY	WAIT	ENDING TASK
24	Port 2 State "MOR"	IDLE	NO TASK	WAITING

(CHECKMAG) CHECKMAG command is executed with 2 magazines.

<i>Event</i>	<i>Description</i>	<i>EPT State(E116)</i>	<i>Task Type</i> °	<i>Task Name Description</i>
1	No magazine on Port 1 and Port 2	IDLE	NO TASK	WAITING

2	Load magazine onto Port 1	BUSY	SUPPORT	MAGAZINE MAPPING
3	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
4	Load magazine onto Port 2	BUSY	SUPPORT	MAGAZINE MAPPING
5	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
6	Execute Port 1-CHECKMAG command	BUSY	PROCESS	PREPARING FOR TRANSFER
7	Execute Port 2-CHECKMAG command	BUSY	PROCESS	PREPARING FOR TRANSFER
8	Start panel transfer	BUSY	PROCESS	PANEL TRANSFER FROM MAG
9	Read ID and load the panel to the unloaded slot of Event 6	BUSY	PROCESS	PANEL READ
10	Transfer panel to Port 1	BUSY	PROCESS	PANEL TRANSFER TO MAG
11	Port1-MagCheckedCompleted	BUSY	PROCESS	PANEL TRANSFERRED
12	Port2-MagCheckedCompleted	BUSY	WAIT	PANEL TRANSFERRED
13	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
14	Execute Port 1-STOP command	BUSY	WAIT	ENDING TASK
15	Port 1 State “MOR”	BUSY	WAIT	WAITING HOST COMMAND
16	Execute Port 2-STOP command	BUSY	WAIT	ENDING TASK

17	Port 2 State “MOR”	IDLE	NO TASK	WAITING
----	--------------------	------	---------	---------

(MAGTOMAG) MAGTOMAG command is executed with 2 magazines.

<i>Event</i>	<i>Description</i>	<i>EPT State(E116)</i>	<i>Task Type</i> °	<i>Task Name Description</i>
1	No magazine on Port 1 and Port 2	IDLE	NO TASK	WAITING
2	Load magazine onto Port 1	BUSY	SUPPORT	MAGAZINE MAPPING
3	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
4	Load magazine onto Port 2	BUSY	SUPPORT	MAGAZINE MAPPING
5	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
6	Execute Port 1-MAGTOMAG command	BUSY	PROCESS	PREPARING FOR TRANSFER
7	Start panel transfer	BUSY	PROCESS	PANEL TRANSFER FROM MAG
8	Read ID	BUSY	PROCESS	PANEL READ
9	Complete panel transfer to Port 2 magazine	BUSY	PROCESS	PANEL TRANSFER TO MAG
10	Port 1-MagToMagCompleted	BUSY	WAIT	PANEL TRANSFERRED
11	Mag on port, mapping complete, no command	BUSY	WAIT	WAITING HOST COMMAND
12	Execute Port 1-STOP command	BUSY	WAIT	ENDING TASK
13	Port 1 State "MOR"	BUSY	WAIT	WAITING HOST COMMAND

14	Execute Port 2-STOP command	BUSY	WAIT	ENDING TASK
15	Port 2 State “MOR”	IDLE	NO TASK	WAITING

5 Message List

Primary Messages		Secondary message	
SxFx	****	SxF0	Abort
S1F1	Are you there request	S1F2	Are you there data
S1F3	Selected equipment status request	S1F4	Selected equipment status request data
S1F11	Status variable name-list request	S1F12	Status variable name-list reply
S1F13	Establish communication request	S1F14	Establish communication request Ack.
S1F15	Request off-line	S1F16	Request off-line Ack.
S1F17	Request on-line	S1F18	Request on-line Ack.
S2F13	Equipment constant request	S2F14	Equipment constant data
S2F15	New equipment constant change	S2F16	New equipment constant change Ack.
S2F17	Date and time request	S2F18	Date and time data
S2F29	Equipment constant name-list request	S2F30	Equipment constant name-list
S2F31	Date and time set request	S2F32	Date and time set Ack.
S2F33	Define report	S2F34	Define report Ack.
S2F35	Link event report	S2F36	Link event report Ack.
S2F37	Enable/disable event report	S2F38	Enable/disable event Ack.
S2F39	Multi-block inquire	S2F40	Multi-block grant
S2F49	Host command send	S2F50	Host command Ack.
S5F1	Alarm report send	S5F2	Alarm report Ack.
S5F3	Alarm report enable/disable send	S5F4	Alarm report enable/disable Ack.
S5F5	Alarm list request	S5F6	Alarm list data
S6F5	Multi-block data send inquire	S6F6	Multi-block grant
S6F11	The event report send	S6F12	The event report Ack.
S7F1	Process program load inquire	S7F2	Process program load grant
S7F3	Process program send	S7F4	Process program Ack.
S7F5	Process program request	S7F6	Process program data
S7F17	Process program delete instruct	S7F18	Process program delete Ack.
S7F19	Current EPPD request	S7F20	Current EPPD data
S9F1	Unrecognized device ID		
S9F3	Unrecognized stream type		
S9F5	Unrecognized function type		
S9F7	Illegal data		
S9F9	Transaction timer timeout		

Primary Messages		Secondary message	
S9F11	Data too long		
S10F1	Terminal request	S10F2	Terminal request Ack.
S10F3	Terminal indication, single block	S10F4	Terminal indication, single block Ack.
S10F5	Terminal indication, multi-block	S10F6	Terminal indication, multi-block Ack.

6 Message Sequence

6.1 Communication Establishment

6.1.1 Communication State Transition

6.1.1.1 Equipment Initiated Communication

Host	SxFx		SxFx	Equipment
		<-	S1F13	Establish communication request
Establish communication request Ack.	S1F14	->		

6.1.1.2 Host Initiated Communication

Host	SxFx		SxFx	Equipment
Establish communication request	S1F13	->		
		<-	S1F14	Establish communication request Ack.

6.2 Control State Model

6.2.1 On-line Transition

6.2.1.1 On-line Transition Initiated by Operator

Host	SxFx		SxFx	Equipment
Operator presses the LOCAL switch or REMOTE switch.				
		<-	S1F1	Are you there request
Are you there data	S1F2	->		
		<-	S6F11	Event report send (LOCAL or REMOTE)
The event report Ack.	S6F12	->		
On-line Mode (LOCAL or REMOTE)				

6.2.1.2 On-line Transition initiated by host

Host	SxFx		SxFx	Equipment
Are you there request	S1F17	->		
		<-	S1F18	Are you there data

Host	SxFx		SxFx	Equipment
		<-	S6F11	Event report send (LOCAL or REMOTE)
Event report Ack.	S6F12	->		
Date and time request (*If needed)	S2F31	->		
		<-	S2F32	Date and time set Ack.
On-line Mode (LOCAL or REMOTE)				

6.2.2 Switching to On-line

6.2.2.1 Switching to On-line by Operator

Host	SxFx		SxFx	Equipment
Operator presses the LOCAL switch or REMOTE switch.				
		<-	S6F11	Event report send (LOCAL or REMOTE)
Event report send Ack.	S6F12	->		
On-line mode (LOCAL or REMOTE)				

6.2.2.2 Switching to On-line by Host

Host	SxFx		SxFx	Equipment
Host command send (LOCAL or REMOTE)	S2F49	->		
		<-	S2F50	Host command Ack.
		<-	S6F11	Event report send (LOCAL or REMOTE)
	S6F12	->		
On-line mode (LOCAL or REMOTE)				

6.2.3 Switching to Off-line

6.2.3.1 Switching to Off-line by Operator

Host	SxFx		SxFx	Equipment
Operator presses the OFF-LINE switch.				
		<-	S6F11	The event report send (OFFLINE)

Host	SxFx		SxFx	Equipment
The event report Ack.	S6F12	->		
Offline mode				

6.2.3.2 Switching to Off-line by Host

Host	SxFx		SxFx	Equipment
Offline request	S1F15	->		
		<-	S1F16	Offline request Ack.
Off-line mode				

6.3 Event Data Collection

6.3.1 Collection Event Occurred in Equipment

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send
The event report Ack.	S6F12	->		

6.3.2 Collection Event Report Setting

Host	SxFx		SxFx	Equipment
Define report	S2F33	->		
		<-	S2F34	Define report Ack.
Link event report	S2F35	->		
		<-	S2F36	Link event report Ack.
Enable/disable event report	S2F37	->		
		<-	S2F38	Enable/disable event report Ack.

6.4 State Data Collection

6.4.1 Equipment State Request

Host	SxFx		SxFx	Equipment
Selected equipment status request	S1F3	->		
		<-	S1F4	Selected equipment status data

6.4.2 Equipment Variable Namelist Request

Host	SxFx		SxFx	Equipment
State variable name list request	S1F11	->		
		<-	S1F12	State constant name list reply

6.5 Alarm Management

6.5.1 Alarm Enable/ Disable

Host	SxFx		SxFx	Equipment
Alarm report enable/disable send	S5F3	->		
		<-	S5F4	Alarm report enable/disable Ack.

6.5.2 Alarm Information Uploading

Host	SxFx		SxFx	Equipment
Alarm list request	S5F5	->		
		<-	S5F6	Alarm list data

6.5.3 Alarm Reporting

Host	SxFx		SxFx	Equipment
		<-	S5F1	Alarm report send
Alarm report Ack.	S5F2	->		
		<-	S6F11	Event report send
Event report Ack.	S6F12	->		

6.6 Remote Control

6.6.1 Operator Initiated Host Command

Host	SxFx		SxFx	Equipment
Operator executes the host command				
		<-	S6F11	Event report send.
The event report Ack.	S6F12	->		

6.6.2 Host Initiated Host Command

Host	SxFx		SxFx	Equipment
Host command send	S2F49	->		
		<-	S2F50	Host command send
		<-	S6F11	The event report send (* If needed)
The event report Ack.	S6F12	->		

6.7 Equipment Constants

6.7.1 Host Initiated Equipment Constants Change

Host	SxFx		SxFx	Equipment
New equipment constants change	S2F15	->		
		<-	S2F16	New equipment constant change Ack

6.7.2 Host Initiated Equipment Constants Request

Host	SxFx		SxFx	Equipment
Equipment constants request	S2F13	->		
		<-	S2F14	Equipment constants data

6.7.3 Host Initiated Equipment Constant Namelist Request

Host	SxFx		SxFx	Equipment
Equipment Constant Namelist Request	S2F29	->		
		<-	S2F30	Equipment constant name list

6.8 Process Program Management

6.8.1 Operator Initiated Process Program Create

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send
The event report Ack	S6F12	->		

6.8.2 Operator Initiated Process Program Change

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send
The event report Ack.	S6F12	->		

6.8.3 Host Initiated Process Program Delete

Host	SxFx		SxFx	Equipment
Process program remove instruction	S7F17	->		
		<-	S7F18	Process program remove Ack

6.8.4 Operator Initiated Process Program Delete

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send
The event report Ack	S6F12	->		

6.8.5 Process Program Directory Request

Host	SxFx		SxFx	Equipment
Current EPPD request	S7F19	->		
		<-	S7F20	Current EPPD data

6.8.6 Host Driven Unformatted Process Program Upload

Host	SxFx		SxFx	Equipment
Process program request	S7F5	->		
		<-	S7F6	Process program data

6.8.7 Host Driven Unformatted Process Program Download

Host	SxFx		SxFx	Equipment
Process program load inquire	S7F1	->		
		<-	S7F2	Process program load grant
Process program send	S7F3	->		
		<-	S7F4	Process program Ack

6.9 Equipment Terminal Service

6.9.1 Equipment Terminal Request

Host	SxFx		SxFx	Equipment
		<-	S10F1	Terminal request
Terminal request Ack	S10F2	->		

6.9.2 Terminal Indication Requested by Host (Single Block)

Host	SxFx		SxFx	Equipment
Terminal indication, single block	S10F3	->		
		<-	S10F4	Terminal indication, single block Ack
Operator acknowledges the message on the equipment terminal and press OK.				
		<-	S6F11	The event report send
The event report Ack.	S6F12	->		

6.9.3 Terminal Indication Requested by Host (Multi Block)

Host	SxFx		SxFx	Equipment
Terminal indication, multi block	S10F5	->		
		<-	S10F6	Terminal indication, multi block Ack
Operator acknowledges the message on the equipment terminal and press OK.				
		<-	S6F11	The event report send
The event report Ack.	S6F12	->		

6.10 Clock

6.10.1 Clock Setting Requested by Host

Host	SxFx		SxFx	Equipment
Date and time setting request	S2F31	->		
		<-	S2F32	Date and time setting Ack

6.10.2 Equipment Current Time Requested by Host

Host	SxFx		SxFx	Equipment
Date and time request	S2F17	->		
		<-	S2F18	Date and time data

6.11 Error Message

6.11.1 Unrecognized Device ID

Host	SxFx		SxFx	Equipment
****	SxFx	->		
		<-	S9F1	Unrecognized device ID

6.11.2 Unrecognized Stream Type

Host	SxFx		SxFx	Equipment
****	SxFx	->		
		<-	S9F3	Unrecognized stream type

6.11.3 Unrecognized Function Type

Host	SxFx		SxFx	Equipment
****	SxFx	->		
		<-	S9F5	Unrecognized function type

6.11.4 Illegal Data

Host	SxFx		SxFx	Equipment
****	SxFx	->		
		<-	S9F7	Illegal data

6.11.5 Transaction Timer Timeout

Host	SxFx		SxFx	Equipment
		<-	SxFx	****
T3 Timeout occurs				
		<-	S9F9	Transaction timer timeout

6.11.6 Data Too long

Host	SxFx		SxFx	Equipment
****	SxFx	->		
		<-	S9F11	Data too long

7 Message Formats

7.1 Function Zero: Abort Transaction

S	F	Function Name	Abbr.	M/S	Direction	Reply
*	0	Abort Transaction		Single	H<=>E	No

◆Description

Used in lieu of an expected reply to abort a transaction. This is replied from equipment when invalid message is received from the host while in offline mode.

◆Message structure

Header only

7.2 Stream 1: Equipment State

7.2.1 Are You There Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	1	Are You There Request	R	Single	H<=>E	Yes

◆Description

Data signifying that the equipment is alive.

◆Message Structure

Header only

7.2.2 Online data

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	2	Online Data	D	Single	H<=>E	No

◆Description

Declaration that it is online.

◆Message structure

Message from the host

1.L,0

Message from the equipment

1. L,2

1. <MDLN>
2. <SOFTREV>

7.2.3 Selected Equipment Status Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	3	Selected Equipment Status Request	SSR	Single	H->E	Yes

◆Description

A request from the host to the equipment to report selected values of its status.

◆Message structure

1. L,n (n = Number of SVIDs)

1. <SVID1>
2. <SVID2>
- :
- n. <SVIDn>

A zero-length list (n=0) means report all SVIDs.

7.2.4 Selected Equipment Status Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	4	Selected Equipment Status Data	SSD	Multi	H<-E	No

◆Descriptions

The value of each SVID is reported to the host according to the order of requests by the host. Host needs to memorize which SVID was requested by the host itself.

◆ Message Structure

1. L,n (n= # of SVs)

1. <SV1>
2. <SV2>
- :

n. <SVn>

A zero-length SV list means that the SVID specified by host does not exist.

See “10. SVID: Status Variable” for details of SVID.

7.2.5 Status Variable Namelist Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	11	Status Variable Namelist Request	SVNR	Single	H->E	Yes

◆Descriptions

A request from the host to the equipment to verify the status variable.

◆Message Structure

1. L,n (n= # of SVIDs)

 1. <SVID1>

 2. <SVID2>

 :

 n. <SVIDn>

A zero-length means report all SVID.

7.2.6 Status Variable Namelist Reply

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	12	Status Variable Namelist Reply	VNRR	Multi	H<-E	No

◆Descriptions

A request from the equipment to report the name and units of certain status variables, in the order requested.

◆Message Structure

1. L,n (n= # of SVIDs)

 1. L,3

 1. <SVID1>

 2. <SVNAME1>

3. <UNITS1>

:

n. L,3

1. <SVIDn>
2. <SVNAMEn>
3. <UNITSn>

See “10. SVID: Status Variable” for details of SVID.

7.2.7 Establish Communications Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	13	Establish Communication Request	CR	Single	H<->E	Yes

◆Descriptions

Resend the S1F13 in pre-defined intervals (communication delay timer) when S1F14 to reply versus S1F13 from the equipment becomes timeout.

◆Message Structure

Message from the host

1.L,0

Message from the equipment

1. L,2

1. <MDLN>
2. <SOFTREV>

7.2.8 Establish Communications Request Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	14	Establish Communication Request Acknowledge	CRA	Single	H<->E	No

◆Descriptions

Ack or deny of S1F13.

◆Message Structure

Message from the host

1. L,2

1. <COMMACK>

2. L,0

Message from the equipment

1. L,2

1. <COMMACK>

2. L,2

1. <MDLN>

2. <SOFTREV>

7.2.9 Request Off-line

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	15	Request OFF-LINE	ROFL	Single	H->E	Yes

◆Descriptions

A request from the host that the equipment change control state to off-line.

◆Message Structure

Header only

7.2.10 Request Off-line Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	16	OFF-LINE Acknowledge	OFLA	Single	H<-E	No

◆Descriptions

Reply as good or fail to S1F15.

◆Message Structure

1. <OFLACK>

7.2.11 Request ON-LINE

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	17	Request ON-LINE	RONL	Single	H->E	Yes

◆Descriptions

A request from the host that the equipment change control state to off-line.

◆Message Structure

Header only

7.2.12 Request ON-LINE Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
1	18	ON-LINE Acknowledge	ONLA	Single	H-<E	No

◆Descriptions

Reply as good or fail to S1F17.

◆Message Structure

1. <ONLACK>

7.3 Stream 2: Equipment Control and Diagnostics

7.3.1 Equipment Constant request

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	13	Equipment Constant Request	ECR	Single	H->E	Yes

◆Descriptions

An inquiry from the host for the equipment constant.

◆Message Structure

1. L,n (n= # of ECIDs)

 1. <ECID1>

 2. <ECID2>

 :

 n. <ECIDn>

A zero-length list means request all constants in a predefined order.

7.3.2 Equipment Constant Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	14	Equipment Constant Data	ECD	Multi	H<-E	No

◆Descriptions

Reply constants in response to S2F13 in the order of requests made by host.

◆Message Structure

1. L,n (n = # of ecv's)

 1. <ECV1>

 2. <ECV2>

 :

 n. <ECVn>

A zero-length ECV list means that the ECID specified by host does not exist.

See “12 ECID: Equipment Constants” for details of ECID.

7.3.3 New Equipment Constant Send

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	15	New Equipment Constant Send	ECS	Single	H->E	Yes

◆Descriptions

A request to change one or more equipment constants.

◆Message Structure

1. L,n (n = # of ECIDs)

 1. L,2

 1. <ECID1>

 2. <ECV1>

 :

n. L,2

1. <ECIDn>
2. <ECVn>

7.3.4 New Equipment Constant Send Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	16	New Equipment Constant Acknowledge	ECA	Single	H<-E	Yes

◆Descriptions

Reply as good or fail to S2F15.

◆Message Structure

1. <EAC>

See “12 ECID: Equipment Constants” for details of ECID.

7.3.5 Date and Time Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	17	Date and Time Request	DTR	Single	H->E	Yes

◆Descriptions

A request for a date and time.

◆Message Structure

Header only

7.3.6 Date and Time Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	18	Date and Time Data	DTD	Single	H<-E	No

◆Descriptions

Send the date and time.

◆Message Structure

1. <TIME>

7.3.7 Equipment constant Namelist Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	29	Equipment Constant Namelist Request	ECNR	Single	H->E	Yes

◆Descriptions

Collect the information associated with the equipment constants.

◆Message Structure

1. L,n (n = # of ECIDs)

1. <ECID1>

:

n. <ECIDn>

A zero-length list means request all information for all equipment constants.

7.3.8 Equipment Constant Namelist

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	30	Equipment Constant Namelist	ECN	Multi	H<-E	No

◆Descriptions

Reply to S2F29

◆Message Structure

1. L,n (n = # of ECIDs)

1. L,6

1. <ECID1>

2. <ECNAME1>

3. <ECMIN1>

4. <ECMAX1>

5. <ECDEF1>

6. <UNITS1>

:

n. L,6

1. <ECIDn>
2. <ECNAMEn>
3. <ECMINn>
4. <ECMAXn>
5. <ECDEFn>
6. <UNITSn>

7.3.9 Date and Time Set Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	31	Date and Time Set Request	DTS	Single	H->E	Yes

◆Descriptions

The host and equipment synchronize time-stamps.

◆Message Structure

1. <TIME>

7.3.10 Date and Time Set Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	32	Date and Time Set Acknowledge	DTA	Single	H<-E	なし

◆Descriptions

Acknowledge the date and time.

◆Message Structure

1. <TIACK>

7.3.11 Define Report

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	33	Define Report	DR	Multi	H->E	Yes

◆Descriptions

A request from the host for the equipment to define a group of event reports.

◆Message Structure

1. L,2

1. <DATAID>

2. L,a (a = # of RPTIDs)

1. L,2

1. <RPTID1>

2. L,b (b = # of VIDs)

1. <VID1>

:

b. <VIDb>

:

a. L,2

1. <RPTIDA>

2. L,b (b = # of VIDs)

1. <VID1>

:

b. <VIDb>

A zero-length list following DATAID deletes all report definitions and associated links.

A zero-length list following RPTID deletes report type RPTID. All CEID links to this RPTID are also deleted.

7.3.12 Define Report Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	34	Define Report Acknowledge	DRA	Single	H<-E	No

◆Descriptions

Replies “good” or “Error”. In case of error, all messages are denied.

◆Message Structure

1. <DRACK>

7.3.13 Link Event Report

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	35	Link Event Report	LER	Multi	H->E	Yes

◆Descriptions

Host links the report to the event ID (CEID).

◆Message Structure

1. L,2

1. <DATAID>

2. L,a (a = # of CEIDs)

1. L,2

1. <CEID1>

2. L,b (b = # of RPTIDs)

1. <RPTID1>

:

b. <RPTIDb>

:

a. L,2

1. <CEIDA>

2. L,b (b = # of RPTIDs)

1. <RPTID1>

:

b. <RPTIDb>

A zero-length list following CEID deletes all report links to that event.

7.3.14 Link Event Report Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	36	Link Event Report Acknowledge	LERA	Single	H-<E	No

◆Descriptions

Replies “good” or “Error”. In case of error, all messages are denied.

◆Message Structure

1. <LRACK>

7.3.15 Enable/Disable Event Report

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	37	Enable/Disable Event Report	EDER	Single	H->E	Yes

◆Descriptions

Host requests to enable or disable reporting for a list of notification event ID (CEID).

◆Message Structure

1. L,2

1. <CEED>

2. L,n (n= # of CEIDs)

 1. <CEID1>

 :

 n. <CEIDn>

A zero-length list following CEED means all CEID.

7.3.16 Enable/Disable Event Report Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	38	Enable/Disable Event Report Acknowledge	EERA	Single	H-<E	No

◆Descriptions

Replies “Acknowledge” or “Error” in response to S2F37. In case of error, all messages are denied.

◆Message Structure

1. <ERACK>

7.3.17 Multi-block Inquire

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	39	Multi-block Inquire	DBMI	Single	H->E	Yes

◆Descriptions

If S2F33 or S2F35 is more than one block, this transaction must occur ahead of a message.

◆Message Structure

1. L,2

1. <DATAID>
2. <DATALENGTH>

7.3.18 Multi-block Grant

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	40	Multi-block Grant	MBG	Single	H-<E	Yes

◆Descriptions

Grant the multi-block message transmission.

◆Message Structure

1. <GRANT>

7.3.19 Enhanced Remote Command

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	49	Enhanced Remote Command	ERC	Multi	H->E	Yes

◆Descriptions

The host requests a command to the object for execution with the relevant parameters.

◆Message Structure

1. L,4

1. <DATAID>
2. <OBJSPEC>
3. <RCMD>

4. L,m (m = # of parameter groups)

1. L,2

1. <CPNAME1>

2. <CEPVAL1>

:

n. L,2

1. <CPNAMEn>

2. <CEPVALn>

See “15. Enhanced Remote Commands” for descriptions of DATAID, OBJSPEC, RCMD, CPNAME, and CEPVAL.

7.3.20 Enhanced Remote Command Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
2	50	Enhanced Remote Command Acknowledge	ERCA	Multi	H<-E	No

◆Descriptions

Replies to the enhanced remote command. If command is denied due to one or more invalid parameters, the list of invalid parameters containing the parameter name and the reason for invalidity is sent.

◆Message Structure

1. L,2

1. <HCACK>

2. L,n (n = # of parameter groups)

1. L,2

1. <CPNAME1>

2. <CEPACK1>

:

n. L,2

1. <CPNAMEn>

2. <CEPACKn>

7.4 Stream 5: Exception Reporting

7.4.1 Alarm Report Send

S	F	Function Name	Abbr.	M/S	Direction	Reply
5	1	Alarm Report Send	ARS	Single	H<-E	Yes

◆Descriptions

Equipment reports an alarm occurrence and an alarm reset by this message.

◆Message Structure

1. L,3

1. <ALCD>
2. <ALID>
3. <ALTX>

7.4.2 Alarm Report Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
5	2	Alarm Report Acknowledge	ARA	Single	H->E	No

◆Descriptions

Replies “good” or “fail” in response to S5F1.

◆Message Structure

1. <ACKC5>

7.4.3 Enable/Disable Alarm Send

S	F	Function Name	Abbr.	M/S	Direction	Reply
5	3	Enable/Disable Alarm Send	EAS	Single	H->E	Yes

◆Descriptions

Sets to enable or disable for reporting an equipment alarm. On the equipment side, it determines whether to send an alarm to the host or not.

◆Message Structure

1. L,2
 1. <ALID>
 2. <ALID>

A zero item length in ALID means set enable/ disable of reporting all alarms.

7.4.4 Enable/Disable Alarm Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
5	4	Enable/Disable Alarm Acknowledge	EAA	Single	H<-E	No

◆Descriptions

Replies “good” or “fail” in response to S5F3.

◆Message Structure

1. <ACKC5>

7.4.5 List Alarm Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
5	5	List Alarm Request	LAR	Single	H->E	Yes

◆Descriptions

The Host requests the Equipment to send the alarm information list.

◆Message Structure

1. <ALID1, ..., ALIDn>

A zero item length in ALID means request all alarms.

7.4.6 List Alarm Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
5	6	List Alarm Data	LAD	Multi	H<-E	No

◆Descriptions

Current alarm status of the Equipment, and it could be more than one alarm data.

◆Message Structure

1. L,m (m= number of ALCDs)

1. L,3

1. <ALCD1>

2. <ALID1>

3. <ALTX1>

:

m. L,3

1. <ALCDm>

2. <ALIDm>

3. <ALTXm>

A zero item length (m=0) in ALTX means no data in relevant alarm.

7.5 Stream 6: Data Collection

7.5.1 Multi-block Data Send Inquire

S	F	Function Name	Abbr.	M/S	Direction	Reply
6	5	Multi-block Data Send Inquire	MBI	Single	H<-E	Yes

◆Descriptions

If S6F11 is more than one block, this transaction must occur ahead of a message.

◆Message Structure

1. L,2

1. <DATAID>

2. <DATALENGTH>

7.5.2 Multi-block Grant

S	F	Function Name	Abbr.	M/S	Direction	Reply
6	6	Multi-block Grant	MBG	Single	H->E	No

◆Descriptions

Replies “good” or “fail” in response to S6F5.

◆Message Structure

1. <GRANT6>

7.5.3 Event Report Send

S	F	Function Name	Abbr.	M/S	Direction	Reply
6	11	Event Report Send	ERS	Multi	H<-E	Yes

◆Descriptions

Equipment reports the host that the group of valid reports linked to the event at the same time of the event occurrence.

◆Message Structure

1. L,3

1. <DATAID>

2. <CEID>

3. L,a (a = number of RPTIDs)

1. L,2

1. <RPTID1>

2. L,b (b= number of Vs)

1. <V1>

:

b. <Vb>

:

a. L,2

1. <RPTIDA>

2. L,b (b= number of Vs)

1. <V1>

:

b. <Vb>

If no Reports are linked to this event, it reports "null". A zero list length (a=0) means no Reports are linked to the CEID.

7.5.4 The event report Ack.

S	F	Function Name	Abbr.	M/S	Direction	Reply
6	12	Event Report Acknowledge	ERA	Single	H->E	No

◆Descriptions

Acknowledges the S6F11 or replies an error.

◆Message Structure

1. <ACKC6>

7.6 Stream 7: Process Program Management

7.6.1 Process Program Load Inquire

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	1	Process Program Load Inquire	PPI	Single	H->E	Yes

◆Descriptions

When replying the S7F3, this transaction is sent first.

◆Message Structure

1. L,2
 1. <PPID>
 2. <LENGTH>

7.6.2 Process Program Load Grant

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	2	Process Program Load Grant	PPG	Single	H-<E	No

◆Descriptions

The Receiver grants a Process Program Load Inquire.

◆Message Structure

1. <PPGNT>

7.6.3 Process Program Send

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	3	Process Program Send	PPS	Multi	H->E	Yes

◆Descriptions

Sends an unformatted process program.

◆Message Structure

1. L,2

1. <PPID>

2. <PPBODY>

7.6.4 Process Program Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	4	Process Program Acknowledge	PPA	Single	H<-E	No

◆Descriptions

Replies for receipt of an unformatted process program.

◆Message Structure

1. <ACKC7>

7.6.5 Process Program Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	5	Process Program Request	PPR	Single	H->E	Yes

◆Descriptions

Requests to send an unformatted process program.

◆Message Structure

1. <PPID>

7.6.6 Process Program Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	6	Process Program Data	FPD	Multi	H<-E	No

◆Descriptions

Sends an unformatted process program.

◆Message Structure

1. L,2

1. <PPID>

2. <PPBODY>

A zero list length means the request was denied.

7.6.7 Delete Process Program Send

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	17	Delete Process Program Send	DPS	Single	H->E	Yes

◆Descriptions

Host requests to delete a process program in the Equipment.

◆Message Structure

1. L,n (n = number of process programs)

1. <PPID1>

2. <PPID2>

:

n. <PPIDn>

A zero list length (n=0) means delete all process programs.

7.6.8 Delete Process Program Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	18	Delete Process Program Acknowledge	DPA	Single	H<-E	No

◆Descriptions

Replies “good” or “fail” in response to S7F17.

◆Message Structure

1. <ACKC7>

7.6.9 Current EPPD Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	19	Current EPPD Request	RER	Single	H->E	Yes

◆Descriptions

Requests the current process program directory (EPPD). This is the list of the entire PPID in the process program which is stored in the Equipment.

◆Message Structure

Header only

7.6.10 Current EPPD Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
7	20	Current EPPD Data	RED	Multi	H-<E	No

◆Descriptions

Reports the current process program directory (EPPD) to the Host.

◆Message Structure

1. L,n (n = Number of process programs)

 1. <PPID1>

 2. <PPID2>

 :

 n. <PPIDn>

7.7 Stream 9: System Error

7.7.1 Unrecognized Device ID

S	F	Function Name	Abbr.	M/S	Direction	Reply
9	1	Unrecognized Device ID	UDN	Single	H<-E	No

◆Descriptions

This is sent when the device ID in the message block header is unrecognized in the node.

◆Message Structure

1. <MHEAD>

7.7.2 Unrecognized Stream Type

S	F	Function Name	Abbr.	M/S	Direction	Reply
9	3	Unrecognized Stream Type	USN	Single	H<-E	No

◆Descriptions

This is sent when the stream type in the message block header is unrecognized in the Equipment.

◆Message Structure

1. <MHEAD>

7.7.3 Unrecognized Function Type

S	F	Function Name	Abbr.	M/S	Direction	Reply
9	5	Unrecognized Function Type	UFN	Single	H<-E	No

◆Descriptions

This is sent when the function type in the message ID is unrecognized in the Equipment.

◆Message Structure

1. <MHEAD>

7.7.4 Illegal Data

S	F	Function Name	Abbr.	M/S	Direction	Reply
9	7	Illegal Data	IDN	Single	H<-E	No

◆Descriptions

This is sent with a stream and function that the Equipment recognizes, but with a data format that is incorrect.

◆Message Structure

1. <MHEAD>

7.7.5 Transaction Timer Timeout

S	F	Function Name	Abbr.	M/S	Direction	Reply
9	9	Transaction Timer Timeout	TTN	Single	H<-E	No

◆Descriptions

Transaction timer timeout occurs and it reports the Host that the transaction was forcedly terminated in the middle.

◆Message Structure

1. <SHEAD>

7.7.6 Data Too Long

S	F	Function Name	Abbr.	M/S	Direction	Reply
9	11	Data Too Long	DLN	Single	H<-E	No

◆Descriptions

Equipment reports the Host that the data that is unmanageable length was sent to the Equipment.

◆Message Structure

1. <MHEAD>

7.8 Stream 10: Terminal Service

7.8.1 Terminal Request

S	F	Function Name	Abbr.	M/S	Direction	Reply
10	1	Terminal Request	TRN	Single	H<-E	Yes

◆Descriptions

Equipment terminal sends a text message to the Host.

◆Message Structure

1. L,2

1. <TID>

2. <TEXT>

7.8.2 Terminal Request Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
10	2	Terminal Request Acknowledge	TRA	Single	H->E	No

◆Descriptions

Replies “good” or “fail” in response to S10F1.

◆Message Structure

1. <ACKC10>

7.8.3 Terminal Display, Single

S	F	Function Name	Abbr.	M/S	Direction	Reply
10	3	Terminal Display, Single	VTN	Single	H->E	Yes

◆Descriptions

Requests the equipment terminal to display the text message in a single block.

◆Message Structure

1. L,2

1. <TID>

2. <TEXT>

7.8.4 Terminal Display, Single Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
10	4	Terminal Display, Single Acknowledge	VTA	Single	H<-E	No

◆Descriptions

Replies “good” or “fail” in response to S10F3

◆Message Structure

1. <ACKC10>

7.8.5 Terminal Display, Multi-Block

S	F	Function Name	Abbr.	M/S	Direction	Reply
10	5	Terminal Display, Multi-Block	VTN	Multi	H->E	Yes

◆Descriptions

Requests to display the text message in multi block on the Equipment terminal.

◆Message Structure

1. L,2

1. <TID>

2. L,n (n = # of text messages, max = 8)

1. <TEXT1>

:

n. <TEXTn>

7.8.6 Terminal Display, Multi-Block Acknowledge

S	F	Function Name	Abbr.	M/S	Direction	Reply
10	6	Terminal Display, Multi-Block Acknowledge	VTA	Single	H<-E	No

◆Descriptions

Replies “good” or “fail” in response to S10F.

◆Message Structure

1. <ACKC10>

8 Data Definitions

8.1 CEID: Collection Event ID

8.1.1 GEM

Name	CEID	RPTID	Descriptions
GemEquipmentOFFLINE	11	11	Indicates that the control state was transited to OFFLINE.
GemControlStateLOCAL	12	11	Indicates that the control state was transited to LOCAL.
GemControlStateREMOTE	13	11	Indicates that the control state was transited to REMOTE.
GemMsgRecognition	14	14	Indicates that the operator recognized the message on the Equipment terminal.
GemPPChangeEvent	16	16	Indicates that the process program of the Equipment was changed.
GemProcessStateChange	30	32	Indicates that the Equipment processing state was transited.
GemOpCommand	7	8	Indicates that the operator instructed a remote command.
AlarmClear	101	101	Indicates that the alarm state was transited to ALARM CLEAR.
AlarmSet	102	101	Indicates that the alarm state was transited to ALARM SET.

8.1.2 EPT

Name	CEID	RPTID	Descriptions
EPTStateChange0	51	51	Indicates that the Equipment EPT state was transited.

8.1.3 Equipment Inherent

Name	CEID	RPTID	Descriptions
IDRead	120	120	The panel ID was read.
UnloadedFromMag	121	121	The panel in the magazine was unloaded.
LoadedToMag	122	125	The panel was loaded to the magazine.

Name	CEID	RPTID	Descriptions
UnloadedFromTool	126	121	The panel was unloaded from the process tool.
LoadedToTool	127	121	The panel was loaded to the process tool.
PP-Selected	128	108	The process program was selected.
LoadToToolCompleted	131	122	All panels have been transferred to the process tool.
UnloadFromToolCompleted	132	122	All panels have been transferred from the process tool.
MagToMagCompleted	133	122	All panels have been transferred from Mag to Mag.
MagCheckedCompleted	134	122	All panels have been checked and put back in Mag.
MappingCompleted	136	123	Slot Map with presence, no presence per slot.
PortStatusChange	141	141	Data including port state.
IDReaderStateChanged	142	142	The setting of IDReader was changed.
DriveStateChange	143	143	The drive state of equipment was changed.
ModeSetCompleted	144	144	The setting of LPMode was changed. *QPLP is not supported.
ReplyIDReadModeChanged	145	145	The setting of ReplyIDReadMode was changed.
LoadStarted	151	124	The transportation of the panel started from the magazine.
UnloadStarted	152	124	The transportation of the panel started to the magazine.
MagToMagStarted	153	124	The transportation of the panel started from the magazine.
MagCheckStarted	154	124	The transportation of the panel started from the magazine.
CheckSlotStarted	156	141	Robot starts mapping.
PortCMDCanceled	161	141	The start command to the port was canceled.
RequestMagazineDock	180	150	Operator read the magazine ID and received the request to dock a magazine.
MagazineDocked	181	151	Magazine has been docked.
MagazineUndocked	182	151	Magazine has been undocked.
RequestOperatorIdCheck	183	152	Operator read the operator ID and received the request to check a operator ID.

Name	CEID	RPTID	Descriptions
RequestOperatorLogin	184	152	request to check a login operator ID.
RequestMappingCheck	185	123	Received the request to check a Slot Map.
ESDRead	187	187	The panel ESD was read.
DEFRead	188	188	The panel DEF was read.
BufferCapacityChanged	192	190	The capacity of the buffer has changed.
BufferModeChanged	193	191	The buffer mode has changed.
LoadedToBufferShuttle1	194	121	The panel was loaded to the buffer. (shuttle1)
LoadedToBufferShuttle2	195	121	The panel was loaded to the buffer. (shuttle2)
UnloadedFromToolShuttle1	196	121	The panel was unloaded from the process tool. (Shuttle1)
UnloadedFromBufferShuttle2	197	121	The panel was unloaded from the buffer. (Shuttle2)
MappingCompletedShuttle1	198	123	Slot Map with presence, no presence per buffer slot. (shuttle1)
MappingCompletedShuttle2	199	123	Slot Map with presence, no presence per buffer slot. (shuttle2)

8.2 RPTID: Report ID

8.2.1 GEM

Name.	RPTID	VID	Descriptions
Control State Report	11	14	Clock
		20	ControlState
Process Program Change Report	16	14	Clock
		22	PPChangeName
		23	PPChangeStatus
Process State Change Report	32	14	Clock
		43	ProcessState
		42	PreviousProcessState
Clock Report	14	14	Clock
Operator Command Report	8	14	Clock
		44	OperatorCommand
Alarm Report	101	14	Clock
		7	AlarmID

Name.	RPTID	VID	Descriptions
		9	AlarmSet

8.2.2 EPT

Name	RPTID	VID	Descriptions
EPT State Report0	51	14	Clock
		81	EqpName
		46	EPTState
		47	PreviousEPTState
		54	EPTStateTime
		58	TaskName
		59	TaskType
		56	PreviousTaskName
		57	PreviousTaskType
		51	BlockedReason
		52	BlockedReasonText

8.2.3 Equipment Inherent

Name	RPTID	VID	Descriptions
PP-Selected Report	108	14	Clock
		136	PPID
IDRead Report	120	14	Clock
		141	LotID
		133	PanelID
		152	Orientation
		151	ResultCode
		134	SlotID
Panel Transfer Report	121	14	Clock
		141	LotID
		133	PanelID
		134	SlotID
Panel Transfer Completed Report	122	14	Clock
		141	LotID
		121	Source PortID

Name	RPTID	VID	Descriptions
		122	Dest PortID
		161	PanelList
Mapping Completed Report	123	14	Clock
		123	PortID
		162	SlotList
Panel Transfer Started Report	124	14	Clock
		141	LotID
		121	Source PortID
		122	Dest PortID
Panel Transfer Report (to mag.)	125	14	Clock
		141	LotID
		133	PanelID
		134	SlotID
		122	Dest PortID
Port Event Report	141	14	Clock
		123	PortID
		124	PortStatus
IDReader State Change Report	142	14	Clock
		207	IDReader State
DriveStateChange	143	14	Clock
		171	EquipmentID
		172	DriveState
Mode Change	144	14	Clock
		213	LPMODE
ID Read Check Mode Change Report	145	14	Clock
		216	ReplyIDReadMode
Request Magazine Dock Report	150	14	Clock
		180	MagazineID
Magazine Dock & Undock Report	151	14	Clock
		123	PortID
		180	MagazineID
		181	OperatorID
Request Operator ID Check Report	152	14	Clock
		181	OperatorID

Name	RPTID	VID	Descriptions	
ESDRead Report	187	14	Clock	
		187	PanelESD	
DEFRead Report	188	14	Clock	
		188	PanelDEF	
Buffer Capacity Change Report	190	14	Clock	
		192	BufferCapacity	
Buffer Mode Change Report	191	14	Clock	
		193	BufferMode	

8.3 SVID: State Variable

8.3.1 GEM

Name	SVID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
AlarmsEnable	8	L	N/A	-	-	-	-	Valid alarm list L,n <ALID>
AlarmsSet	9	L	N/A	-	-	-	-	Alarm list that is set. L,n <ALID>
AlarmState	10	U1	N/A	-	0	1	0	Latest alarm state transition 0:ON->OFF 1:OFF->ON
Clock	14	A[16]	N/A	"###..."	-	-	"00000 00000 00000 0"	Equipment's current time "YYYYMMDDhh mmssec"

Name	SVID	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
CommState	2	U1	N/A	-	0	2	0	Current communication status 0: DISABLED 1: NOT COMMUNICATING 2: COMMUNICATING
ControlState	20	U1	N/A	-	0	5	1	Current control status 1: EQUIPMENT OFF-LINE 2: ATTEMPT ON-LINE 3: HOST OFF-LINE 4: LOCAL 5: REMOTE
EventsEnabled	13	L	N/A	-	-	-	-	Valid event list L,n <CEID>
PPDirectory	25	A[0,160]	N/A	"###..."	-	-	""	Process program storage area
PPE execName	24	A[0,25]	N/A	"###..."	-	-	""	Process program that is selected.

Name	SVID	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
PreviousProces sState	42	U1	N/A	-	0	5	0	Previous equipment processing 0:INIT 1:IDLE 2:SETUP 3:READY 4:EXECUTING 5:PAUSE 6:ALARM
ProcessState	43	U1	N/A	-	0	5	0	Current equipment processing status 0:INIT 1:IDLE 2:SETUP 3:READY 4:EXECUTING 5:PAUSE 6:ALARM

8.3.2 EPT

Name	SVID	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
EPTState	46	U1	N/A	-	0	2	0	EPT State 0 : IDLE 1 : BUSY 2 : BLOCKED

Name	SVID	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
PreviousEPTSt ate	47	U1	N/A	-	0	2	0	Previous EPT State 0 : IDLE 1 : BUSY 2 : BLOCKED

8.3.3 Equipment Inherent

Name	SVID	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
Port1Status	201	A[3]	N/A	"###"	"0"	"9"	"0"	Port status MIR: Ready to move in the magazine MIC: Move-in complete MOR: Ready to move out the magazine MPC: Mapping has been completed. OOS: Out of service.

Name	SVID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
Port2Status	202	A[3]	N/A	“####”	“”	“”	“”	Port status MIR: Ready to move in the magazine MIC: Move-in complete MOR: Ready to move out the magazine MPC: Mapping has been completed. OOS: Out of service.
Port3Status	203	A[3]	N/A	“####”	“”	“”	“”	Port status MIR: Ready to move in the magazine MIC: Move-in complete MOR: Ready to move out the magazine MPC: Mapping has been completed. OOS: Out of service.
Port1SlotList	204	L	N/A	-	-	-	-	L,n n=24 L,2, < A[2] SlotID > <U1 Presence> :

Name	SVID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
Port2SlotList	205	L	N/A	-	-	-	-	L,n n=24 L,2, < A[2] SlotID > <U1 Presence> :
Port3SlotList	206	L	N/A	-	-	-	-	L,n n=24 L,2, < A[2] SlotID > <U1 Presence> :
IDReader State	207	U1	N/A	-	0	1	1	IDReader state 0 : DISABLE 1 : ENABLE
EquipmentDriveState	208	U1	N/A	-	0	1	0	Drive state 0 : Stopping 1 : Running
Port1DriveState	209	U1	N/A	-	0	1	0	Drive state 0 : Stopping 1 : Running
Port2DriveState	210	U1	N/A	-	0	1	0	Drive state 0 : Stopping 1 : Running
Port3DriveState	211	U1	N/A	-	0	1	0	Drive state 0 : Stopping 1 : Running
ShuttleDriveState	212	U1	N/A	-	0	1	0	Drive state 0 : Stopping 1 : Running
LPMode	213	U1	N/A	-	0	2	0	LP Mode 1: Loader 2: Unloader

Name	SVID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
IsMaster	214	BOOL EAN	N/A	-	-	-	False	The setting of LP. True: Master False: Slave
MagSize	215	U1	N/A	-	0	24	24	Slot size of magazine. Slot size = 24
Reply ID Read Mode	216	U1	N/A	-	0	1	0	Panel ID check for MES 0: DESABLE 1:ENABLE
PanelCount	220	U4	N/A	-	0	21474 83647	0	Panel Count

8.4 DVNAME: Data value

8.4.1 GEM

Name	DV NAME	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
AlarmID	7	U2	N/A	-	0	65535	0	Latest alarm ID that was occurred or reset
PPChangeName	22	A[0,25]	N/A	"###..."	-	-	"	PP ID that was changed by operator.
PPChangeStatus	23	U1	N/A	-	1	3	1	Contents changed in the process program. 1: Created new 2: Edited 3: Deleted

OperatorComm and	44	U1	N/A	-	1	19	1	Operator command 1:ABORT 2:GO-LOCAL 3:GO-REMOTE 4:PAUSE 5:PP-SELECT 6:RESUME 7:STOP 8:LOADSTART 9:UNLOADSTAR T 10:TRANSFERM AGTOMAG 11:CHECKMAG 12:SETLIGHTTO WER 13: ENABLE-IDREAD 14: DISABLE-IDREAD 15: CHECKSLOT 16: PORTCMDCANC EL 17:SETMASTER 18: REPLYMAGAZI NEDOCK 19: REPLYOPERAT ORIDCHECK 20: REPLYOPERAT ORLOGIN
---------------------	----	----	-----	---	---	----	---	--

8.4.2 EPT

Name	DV NAME	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
BlockedReason	51	U1	N/A	-	0	7	0	Reason for EPT state “BLOCKED” 0:Not BLOCKED 1:Unknown 2:Safety threshold 3:Error state 4:Invalid parameters 5:Cancelling, cancelled 6:Pausing. Paused 7:Drive state is stopping.
BlockedReason Text	52	A[0,80]	N/A	“###...”	-	-	“”	Reason for EPT state “BLOCKED” In text.
EPTStateTime	54	U4	Sec	-	0	65535	0	Time elapsed in EPT state (sec.)

Name	DV NAME	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
PreviousTaskN ame	56	A[0,80]	N/A	"###... "	-	-	"	Previous task name “WAITING” “MAGAZINE MAPPING” “WAITING HOST COMMAND” “PREPARING FOR TRANSFER” “PANEL TRANSFER FROM MAG” “WAITING SMEMA” “PANEL TRANSFER TO TOOL” “PANEL TRANSFERRED” “ENDING TASK” “POSITION FROM TOOL” “PANEL TRANSFER FROM TOOL” “PANEL TRANSFER TO MAG” “PANEL READ”

Name	DV NAME	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
PreviousTaskT ype	57	U1	N/A	-	0	6	1	Previous task type 0:No task 1:unspecified 2:Process 3:Support 4:Equipment maintenance 5:Equipment diagnostics 6:Waiting

Name	DV NAME	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
TaskName	58	A[0,80]	N/A	"###..."	-	-	"	Task name "WAITING" "MAGAZINE MAPPING" "WAITING HOST COMMAND" "PREPARING FOR TRANSFER" "PANEL TRANSFER FROM MAG" "WAITING SMEMA" "PANEL TRANSFER TO TOOL" "PANEL TRANSFERRED" "ENDING TASK" "POSITION FROM TOOL" "PANEL TRANSFER FROM TOOL" "PANEL TRANSFER TO MAG" "PANEL READ"

Name	DV NAME	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
TaskType	59	U1	N/A	-	0	6	0	Task type 0:No task 1:unspecified 2:Process 3:Support 4:Equipment maintenance 5:Equipment diagnostics 6: Waiting

8.4.3 Equipment Inherent

Name	DV NAME	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
Source PortID	121	U1	N/A	-	0	3	0	Load Port ID.
Dest PortID	122	U1	N/A	-	0	3	0	Unload Port ID.
Port ID	123	U1	N/A	-	0	3	0	Load/Unload Port ID.
PortStatus	124	A[3]	N/A	“###”	“”	“”	“”	Port status MIR: Ready to move in the magazine MIC: Move-in complete MOR: Ready to move out the magazine MPC: Mapping has been completed.

Name	DV NAME	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
PanelID	133	A[0,24]]	N/A	“###...”	“”	“”	“”	Panel ID Ex. “123456789012345 ” (15 digit – Numeric)
SlotID	134	A[0,2]	N/A	“##”	“”	“”	“”	Slot Number “01” – “24”
Presence	135	U1	N/A	-	0	1	0	Presence of panels 0: no presence 1: presence
PPID	136	A[0,25]]	N/A	“###...”	“”	“”	“”	Process program
LotID	141	A[0,20]]	N/A	“###...”	“”	“”	“”	Lot ID
ResultCode	151	U1	N/A	-	0	128	0	Result code (panel ID read) 0: OK 1: Read NG 2: top/bottom mismatch 3: Bad panel 4: Unknown PanelID 5: Timeout 8: Duplicate PanelID 16: PanelID/Slot mismatch 32: DestSlotFull(Compl ete event only) 128: Resume Continue

Name	DV NAME	Type	Unit	Forma t	Min. Value	Max. Value	Defaul t Value	Descriptions
Orientation	152	A[3,25]]	N/A	“###...”	“”	“”	“”	Orientation
PanelList	161	L	N/A	-	-	-	-	L,n n=24 L,4, < PanelID(133)> <SlotID(134)> <ResultCode(151)> <Orientation(152) >
SlotList	162	L	N/A	-	-	-	-	L,n n=24 L,2, < SlotID(134)> <Presence(135)>
EquipmentID	171	U1	N/A	-	0	4	0	Equipment ID 0: Equipment(ALL) 1: Port1 2: Port2 3: Port3 4: Shuttle
DriveState	172	U1	N/A	-	0	1	0	Drive state 0 : Stopping 1 : Running
MagazineID	180	A[0,10]]	N/A	“###...”	“”	“”	“”	Magazine ID Ex. “M00001”
OperatorID	181	A[0,10]]	N/A	“###...”	“”	“”	“”	Operator ID
PanelESD	187	U4	N/A	-	0	999	0	Panel ESD Panel capacitance

Name	DV NAME	Type	Unit	Forma t	Min. Value	Max. Value	Default Value	Descriptions
PanelDEF	188	U4	N/A	um	0	65536	0	Panel DEF Panel thickness
ESDResultCode	188	U1	N/A	-	0	1	0	Result code (panel ESD read) 0: OK 1: Read NG
DEFResultCode	189	U1	N/A	-	0	1	0	Result code (panel DEF read) 0: OK 1: Read NG
BufferCapacity	192	U1	N/A	-	0	36	0	Remaining capacity of buffer
BufferMode	193	U1	N/A	-	0	9	0	BufferMode 0:N/A 1:Normal 2:Buffering 3:Auto Eject 4:Loader 5:Unloader

8.5 ECID:Equipment Constants

8.5.1 GEM

Name	ECID	Type	Unit	Forma t	Min. Value	Max. Value	Default Value	Descriptions
EstablishCommunicationTimeout	3	U2	Sec	-	1	1800	30	Interval to resend a S1,F13 (communication delay timer value)
HeartBeat	4	U2	Sec	-	0	65535	30	Time waiting for sending S1,F1

Name	ECID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
InitCommState	1	U1	N/A	-	0	1	1	Communication state at the start 0:DISABLED 1:ENABLED
InitControlState	16	U1	N/A	-	1	2	2	Control state at the start 1:OFF-LINE 2:ON-LINE
OfflineSubstate	17	U1	N/A	-	1	3	1	Offline state at the start 1:EQUIPMENT OFF-LINE 2:ATTEMPT ON-LINE 3:HOST OFF-LINE
OnlineFailed	18	U1	N/A	-	1	3	1	Control state when failed to set to ONLINE. 1:EQUIPMENT OFF-LINE 3:HOST OFF-LINE
OnlineSubstate	19	U1	N/A	-	4	5	4	Online state at the start. 4:LOCAL 5:REMOTE
TimeFormat	15	U1	N/A	-	0	2	1	Number of digits in the STIME, and TIME. 0:12byte 1:16byte 2:14byte

Name	ECID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
WBITS5	6	U1	N/A	-	0	1	1	Reply message for S5F*. 0:No Reply 1: Replied
WBITS6	12	U1	N/A	-	0	1	1	Reply message for S6F* 0: No Reply 1: Replied
WBITS10	40	U1	N/A	-	0	1	1	Reply message for S10F* 0: No Reply 1: Replied

8.5.2 EPT

Name	ECID	Type	Unit	Format	Min. Value	Max. Value	Default Value	Descriptions
EqpName	81	A[0,80]	N/A	“###...”	-	-	“LOAD PORT”	Equipment name “LOADPORT”

8.5.3 Equipment Inherent

8.6 ALID: Alarm Definition

ALID.	ALED	ALCD	Description

*Please see the separate volume.

8.7 Data Item Dictionary

Name	Format	Message	Descriptions
ACKC5	B[1]	S5F2 S5F4	Acknowledgement code 0= Acknowledged >0= Error, not acknowledged 1 = Unknown alarm ID * When the host replies the value other than “0”, it is handled as acknowledged.
ACKC6	B[1]	S6F12	Acknowledgement code 0= Acknowledged >0= Error, cannot acknowledge 1-63=On hold * When the host replies the value other than “0”, it is handled as acknowledged.
ACKC7	B[1]	S7F4 S7F18	Acknowledgement code 0= Acknowledged 1=Not permitted 2=Length error 3= Geometry overflow 4=PPID not defined 5=Mode error 6=Command was executed and event is reported to notify its completion. 7=PPID Mismatch >7=Other error 8-63=On hold
ACKC10	B[1]	S10F2 S10F4 S10F6	Acknowledgement code 0= Acknowledged 1= No message displayed 2= Not able to use the terminal 3-63=On hold
ALCD	B[1]	S5F1 S5F6	Alarm code bit8=1 Alarm state occurred bit8=0 Alarm state released bit7-1 is not used

Name	Format	Message	Descriptions
ALED	B[1]	S5F3	Alarm enable/ disable code bit8=1 Alarm enabled bit8=0 Alarm disabled
ALID	U2	S5F1 S5F3 S5F5 S5F6	Alarm ID
ALTX	A[1,40]	S5F1 S5F6	Alarm text
CEED	BOOLEAN	S2F37	Collection event enabled/ disabled FALSE = Disabled TRUE = Enabled
CEID	U4	S2F35 S2F37 S6F11	Notification event ID
COMMACK	B[1]	S1F14	Code to acknowledge the communication establishment 0= Acknowledged 1= Denied, retry 2-63=On hold
CPACK	B[1]	S2F50	Command parameter acknowledgement code 1=CPNAME does not exist. 2= Invalid value specified for CPVAL. 3= Invalid format specified for CPVAL >3=Other equipment inherent error 4-63=On hold
CPNAME	A[0,40]	S2F49 S2F50	Command parameter name
CPVAL	Any	S2F49	Command parameter value

Name	Format	Message	Descriptions
DATAID	U4	S2F33 S2F35 S2F39 S2F49 S6F5 S6F11	Data ID
DATALENGTH	U4	S2F39 S6F5	Data length
DRACK	B[1]	S2F34	Definition report acknowledgement code 0 = Acknowledged 1 = Denied, shortage of space 2 = Denied, invalid format 3 = Denied, at least one RPTID was already defined. 4= Denied, at least, one VID is missing
EAC	B[1]	S2F16	Equipment acknowledgement code 0= Acknowledged 1= Denied, at lease one constant is missing. 2= Denied, busy 3= Denied, at lease one constant is out of scope. >3=Other equipment inherent error 4-63=On hold
ECDEF	Any	S2F30	Equipment constant default value
ECID	U4	S2F13 S2F15 S2F29 S2F30	Equipment constant ID
ECMAX	Any	S2F30	Maximum equipment constant value
ECMIN	Any	S2F30	Minimum equipment constant value

Name	Format	Message	Descriptions
ECNAME	A[1,80]	S2F30	Equipment constant name * If the item length is “0”, it is interpreted that an invalid ECID or ECV that is not present in the equipment is given.
ECV	Any	S2F14 S2F15	Equipment constant * If the item length is “0”, it is interpreted that an invalid ECID or ECV that is not present in the equipment is given.
ERACK	B[1]	S2F38	Valid/ Invalid event report 0 = Acknowledged 1 = Denied, at least one CEID is missing.
GRANT	B[1]	S2F40	Permission code 0= Permitted
GRANT6	B[1]	S6F6	Permission for transmission 0= Transmission permitted 1= Busy, request to retry 2= Not needed >2=Other error 3-63=On hold
HCACK	B[1]	S2F50	Host command parameter acknowledgement code 0 = Acknowledged, the command was executed 1= Command is not present 2= Not able to execute the command 3= At least one parameter is invalid. 4= Acknowledged, command was executed and event was reported to notify its completion. 5=Denied, it was already executed 6=The object does not exist 7-63=On hold

Name	Format	Message	Descriptions
LENGTH	U4	S7F1	Process program length
LRACK	B[1]	S2F36	Link report acknowledgement code 0=Acknowledged 1=Denied, shortage of space 2=Denied, invalid format 3= Denied, at least one CEID link is already defined. 4= Denied, at lease one CEID is missing. 5= Denied, at least one RPTD is missing.
MDLN	A[0,6]	S1F2 S1F13 S1F14	Equipment model type
MHEAD	B[10]	S9F1 S9F3 S9F5 S9F7 S9F11	Message header with an error
OBJSPEC	A[0]	S2F49	
OFLACK	B[1]	S1F16	Acknowledgement code vs. request for offline 0=Acknowledgement for offline 1-63=On hold
ONLACK	B[1]	S1F18	Acknowledgement code vs. request for online 0= Acknowledgement for online 1= Online not permitted 2= Equipment is already Online 3-63=On hold
PPBODY	B[1,*]	S7F3 S7F6	Process program body
PPGNT	B[1]	S7F2	Process program permission state 0=OK

Name	Format	Message	Descriptions
PPID	A[0,25]	S7F1 S7F3 S7F5 S7F6 S7F17 S7F20	Process program ID
RCMD	A[1,20]	S2F49	Remote command name
RPTID	U4	S2F33 S2F35 S6F11	Report ID
SHEAD	B[10]	S9F9	Primary message header with its transaction timer set.
SOFTREV	A[0,6]	S1F2 S1F13 S1F14	Software revision code
SV	Any	S1F4	State transition data
SVID	U4	S1F3 S1F11 S1F12	State variable ID
SVNAME	A[1,80]	S1F12	State variable name * If the item length is “0”, it is interpreted that an invalid SVID or SVID that is not present in the equipment is given.
TEXT	A[0,80]	S10F1 S10F3 S10F5	Display letter string
TIACK	B[1]	S2F32	Time acknowledgement code 0=OK 1= Error, not permitted 2-63=On hold
TID	B[1]	S10F1 S10F3 S10F5	Terminal No.

Name	Format	Message	Descriptions
TIME	A[12,16]	S2F18	Date & time
		S2F31	[YYYYMMDDhhmmsscc], or [YYMMDDhhmmss]
UNITS	A[0,15]	S1F12	Unit
		S2F30	
V	Any	S6F11	Variable data
VID	U4	S2F33	Variable ID
SlotOrder	A[0,2]	S2F49	Slot Order by which loader should pull from Mag.
PanelID	A[0,24]	S2F49	Panel ID

8.8 Enhanced Remote Command

8.8.1 Enhanced Remote Command List

RCMD	Descriptions
“ABORT”	Instructs to stop the current processing cycle, make the cart ready to be undocked, and make the drive state of equipment to “Stopping”.
“GO-LOCAL”	Requests to switch the control state from Remote to Local.
“GO-REMOTE”	Requests to switch the control state from Local to Remote.
“PAUSE”	Instructs to pause the current process cycle.
“PP-SELECT”	Instructs to make the requested process program available on the equipment.
“RESUME”	Instructs to resume the current cycle.
“STOP”	Instructs to stop the current process cycle, make the cart ready to be undocked. Let the drive state of equipment remain “Running”.
“LOADSTART”	Load panel(s) from Mag into tool port
“UNLOADSTART”	Unload panel(s) from tool port into Mag
“TRANSFERMAGTOMAG”	Transfer panel(s) from Mag on port x to Mag on port y.
“CHECKMAG”	Pull panel(s) out of mag, read ID, flip?, and put back in Mag (same slot)
“SETLIGHTTOWER”	Command from Host to control color and status of lighttower
“ENABLE-IDREAD”	Command from Host validates the panel ID read function.
“DISABLE-IDREAD”	Command from Host invalidates the panel ID read function.
“CHECKSLOT”	Instructs to check Slot Map.

RCMD	Descriptions
“PORTCMDCANCEL”	The START command (LOADSTART, UNLOADSTART and CHECKMAG) is canceled.
“SETMASTER”	Instructs to change LP mode(Loader or Unloader) of the loadport. Only the master loadport can receive this command.
“REPLYMAGAZINEDOCK”	Replies the result for RequestMagazineDock event.
“REPLYOPERATORIDCHECK”	Replies the result for RequestOperatorIdCheck event.
“REPLYIDREAD”	Replies the result for IDRead event.
“ENABLE-REPLYIDREAD”	Command from Host validates the receive function of REPLYIDREAD.
“DISABLE-REPLYIDREAD”	Command from Host invalidates the receive function of REPLYIDREAD.
“REPLYMAPPINGCHECK”	Replies the result for RequestMappingCheck event.
“REPLYOPERATORLOGIN”	Replies the result for RequestOperatorLogin event.

 RCMD is case sensitive. For example, “PAUSE” and “pause” are handled as different commands.

8.8.2 Enhanced Remote Command Parameter List

RCMD.	CPNAME	CEPVAL
“ABORT”	“PORTID”	Description: Port ID Type: U1 0: ALL 1: Port1 2: Port2 3: Port3
“GO-LOCAL”	None	
“GO-REMOTE”	None	
“PAUSE”	None	
“PP-SELECT”	“PPID”	Description: Process Program Type: A[0, 25]

RCMD.	CPNAME	CEPVAL
“RESUME”	“MODE”	<p>Description: Parameter option of resume command Type: U1</p> <p>1: Resume Next 2: Resume Retry 3: Resume Continue</p> <p>*This option is ignored except when the ID read error is recovered.</p>
“STOP”	“PORTID”	<p>Description: Port ID Type: U1</p> <p>0: ALL 1: Port1 2: Port2 3: Port3</p>
“LOADSTART”	“LOTID”	<p>Description: Lot ID Type: A[0,20]</p>
	“SRCPORTID”	<p>Description: Source Port ID Type: U1</p>
	“DESTPORTID”	<p>Description: Destination Port ID Type: U1</p>
	“QTY”	<p>Description: Quantity of panels in lot. If order not populated, complete Load after qty reached. If order populated, ignore QTY. Type: U4</p>
	“ORDER”	<p>Description: Slot Order by which loader should pull from Mag. If populated, pull panels out in specified order, when order completed, complete Load. If order not provided, load top to bottom. Type: L L,n (n = 0 or 24) If not populated, list is 0.</p> <ul style="list-style-type: none"> 1. “SlotOrder” 2. “SlotOrder” :

RCMD.	CPNAME	CEPVAL
	“LOTPANELS”	Description: All Panel IDs in the lot. Type: L L,m (m= 1-m) m = pending 1. “PanelID” 2. “PanelID” : :
	“SRC PANELS”	Description: Source Slot IDs for each Panel ID. Type: L L,n (n = 0 or 24) If not populated, list is 0. 1. “PanelID” // Slot 1 2. “PanelID” // Slot2 : :
“UNLOADSTART”	“LOTID”	Description: Lot ID Type: A[0,20]
	“SRCPORTID”	Description: Source Port ID Type: U1
	“DESTPORTID”	Description: Destination Port ID Type: U1
	“QTY”	Description: Quantity of panels in lot. Type: U4
	“LOTPANELS”	Description: Panel IDs in the lot. Type: L L,m (m= 1-m) m = pending 1. “PanelID” 2. “PanelID” : :
	“DESPANELS”	Description: Destination Slot IDs for each Panel ID. If populated, put panel ID in designated slot. If not populated, fill mag top to bottom. Type: L L,n (n = 0 or 24) If not populated, list is 0. 1. “PanelID” // Slot 1 2. “PanelID” // Slot2 : :

RCMD.	CPNAME	CEPVAL
“TRANSFERMAGTOMAG”	“LOTID”	Description: Lot ID Type: A[20]
	“SRCPORTID”	Description: Source Port ID Type: U1
	“DESTPORTID”	Description: Destination Port ID Type: U1
	“QTY”	Description: Quantity of panels in lot. Type: U4
	“ORDER”	Description: Slot Order by which loader should pull from Mag. If populated, pull panels out in specified order, when order completed, complete MagtoMag. Type: L L,n (n = 0 or 24) If not populated, list is 0. 1. “SlotOrder” 2. “SlotOrder” : :
	“LOTPANELS”	Description: Panel IDs in the lot. Type: L L,m (m= 1-m) m = pending 1. “PanelID” 2. “PanelID” : :
	“SRCPANELS”	Description: Source Slot IDs for each Panel ID. Type: L L,n (n = 0 or 24) If not populated, list is 0. 1. “PanelID” // Slot 1 2. “PanelID” // Slot2 : :

RCMD.	CPNAME	CEPVAL
	“DESTPANELS”	Description: Destination Panel IDs for each Panel ID. If populated, place panel in specified slot in this list. If not populated, place panel in same slot ID that it came out of in source mag. Type: L L,n (n = 0 or 24) If not populated, list is 0. 1. “PanelID” // Slot 1 2. “PanelID” // Slot2 : :
“CHECKMAG”	“LOTID”	Description: Lot ID. Type: A[20]
	“PORTID”	Description: Port ID Type: U1
	“LOTPANELS”	Description: Panel IDs in the lot. Type: L L,m (m= 1-m) m = pending 1. “PanelID” 2. “PanelID” : :
	“SRCPANELS”	Description: Source Slot IDs for each Panel ID. Type: L L,n (n = 0 or 24) If not populated, list is 0. 1. “PanelID” // Slot 1 2. “PanelID” // Slot2 : :
“SETLIGHTTOWER”	“COLOR”	Description: Color of lighttower. Type: U1 1: Green 2: Amber 3: Red

RCMD.	CPNAME	CEPVAL
	“STATUS”	Description: Status of lighttower. Type: U1 1: ON 2: OFF 3: Flash
	“BUZZER”	Description: Buzzer of lighttower. Type: U1 1: Continuous 2: Intermittent 3: OFF
“ENABLE-IDREAD”	None	
“DISABLE-IDREAD”	None	
“CHECKSLOT”	“PORTID”	Description: Port ID Type: U1
“PORTCMDCANCEL”	“PORTID”	Description: Port ID Type: U1
“SETMASTER”	“MASTER”	The loader/unloader mode of LP. Type: U1 1: Loader 2: Unloader
“REPLYMAGAZINEDOCK”	“PORTID”	Description: Port ID Type: U1 1: Port1 2:Port2 3:Port3
	“MAGAZINEID”	Description: Magazine ID. Type: A[10]
	“RESULT”	Description: The result for RequestMagazineDock event. Type: U1 0: Acknowledge 1: Negative acknowledge
“REPLYOPERATORIDCHE CK”	“OPERATORID”	Description: Operator ID. Type: A[10]

RCMD.	CPNAME	CEPVAL
	“RESULT”	Description: The result for RequestOperatorIdCheck event. Type: U1 0: Acknowledge 1: Negative acknowledge
“REPLYIDREAD”	“RESULTCODE”	Description: Result code (panel ID read) Type: U1 0: OK 3: Bad Panel
“ENABLE-REPLYIDREAD”	None	
“DISABLE-REPLYIDREAD”	None	
“REPLYMAPPINGCHECK”	“PORTID”	Description: Port ID Type: U1 0: ALL 1: Port1
	“RESULT”	Description: The result for RequestMappingCheck event. Type: U1 0: Acknowledge 1: Negative acknowledge
“REPLYOPERATORLOGIN”	“OPERATORID”	Description: Operator ID. Type: A[10]
	“RESULT”	Description: The result for RequestOperatorLogin event. Type: U1 0: Acknowledge 1: Negative acknowledge

8.9 Supplementation with VID

VID	Descriptions	CEIDs that can be linked
7	AlarmID	101,102
9	AlarmSet	101,102
14	Clock	ALL

20	ControlState	11,12,13,14
22	PPChangeName	16
23	PPChangeStatus	16
42	PreviousProcessState	30
43	ProcessState	30
44	OperatorCommand	7
46	EPTState	51
47	PreviousEPTState	51
51	BlockedReason	51
52	BlockedReasonText	51
54	EPTStateTime	51
56	PreviousTaskName	51
57	PreviousTaskType	51
58	TaskName	51
59	TaskType	51
81	EqpName	51
121	Source PortID	131,132,133,134,135,151,152,153,154,155
122	Dest PortID	131,132,133,134,135,151,152,153,154,155,122
123	PortID	136,141,156,161,181,182,185
124	PortStatus	141,156,161
133	PanelID	120,121,122,124,125,126,127
134	SlotID	120,121,122,124,125,126,127
136	PPID	128
141	LotID	120,121,122,124,125,126,127,131,132,133,134,135,151,152,153,154,155
151	ResultCode	120
152	Orientation	120
161	PanelList	131,132,133,134,135
162	SlotList	136,185
171	EquipmentID	143
172	DriveState	143
180	MagazineID	180,181,182
181	OperatorID	181,182,183, 184
205	IDReader State	142
210	LPMODE	144
216	ReplyIDReadMode	145

9 Communication scenarios

9.1 Loader Scenario

9.1.1 Single Magazine Basic Scenario

AES specifies the process program for the load port.				
Host	SxFx		SxFx	Equipment
The host command send (PP-SELECT)	S2F49	->		
		<-	S2F50	The host command Ack.
		<-	S6F11	The event report send (PP-Selected)
The event report Ack	S6F12	->		

S2F49 H -> E The host command send (PP-SELECT)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] “” > //OBJSPEC
- 3. < A[9] "PP-SELECT" > // RCMD

4.L,1

- 1. L,2
 - 1. < A[4] "PPID" >
 - 2. < A[25] "ABCDEFGHIJKLMNPQRSTUVWXYZ" >

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

S6F11 H <- E The event report send (PP-Selected)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 128 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >

2. L,2

- 1. < A[16] “2010052712474500” > // Clock
- 2. < A[25] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // PPID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (portstatuschange=MIR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712474500” > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] “MIR” > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorIdCheck)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 183 >         //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,2
      1. < A[16] "2010052712504500" >      // Clock
      2. < A[9] "123456789" >                // OperatorID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)
L,4
 1. < U4 0 > //DATAID
 2. < A[0] "" > //OBJSPEC
 3. < A[20] "REPLYOPERATORIDCHECK" > // RCMD
 4. L,2
 1. L,2
 1. < A[10] "OPERATORID" >
 2. < A[9] "123456789" >
 2. L,2
 1. < A[6] "RESULT" >
 2. < U1 0 >

S2F50 H <- E The host command Ack.
L,2
 1. < B[1] 0 >
 2. L,0

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorLogin)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorLogin)
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 184 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,2
- 1. < A[16] "2010052712504500" > // Clock
- 2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORLOGIN)
L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[20] "REPLYOPERATORLOGIN" > // RCMD
- 4. L,2
- 1. L,2
 - 1. < A[10] "OPERATORID" >
 - 2. < A[9] "123456789" >
- 2. L,2
 - 1. < A[6] "RESULT" >
 - 2. < U1 4>

S2F50 H <- E The host command Ack.
L,2

- 1. < B[1] 0 >
- 2. L,0

Operater reads the Magazine ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)

The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestMagazineDock)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 180 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,2
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[6] "M00001" > // MagazineID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD
- 4. L,2
 - 1. L,2
 - 1. < A[10] "MAGAZINEID" >
 - 2. < A[6] "M00001" >
 - 2. L,2
 - 1. < A[6] "RESULT" >
 - 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

Operator loads a magazine to the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 181 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[6] "M00001" > // MagazineID

4. < A[9] “123456789” > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Loader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (RequestMappingCheck)
The event report Ack.	S6F12	->		
The host command send (REPLYMAPPINGCHECK)	S2F49	->		
		<-	S2F50	The host command Ack
		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

S6F11 H <- E The event report send (MappingCompleted)

L,3

1. < U4 0 > //DATAID

2. < U4 136> //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,3

1. < A[16] “2010052712504500” > // Clock

2. < U1 1 > // PortID

3. L,24 // SlotList

1.L,2

1. <A[2] “01” >

2.<U1 1>
2.L,2
1.<A[2] “02”>
2.<U1 1>
3.L,2
1.<A[2] “03”>
2.<U1 1>
4.L,2
1.<A[2] “04”>
2.<U1 0>
5.L,2
1.<A[2] “05”>
2.<U1 0>
6.L,2
1.<A[2] “06”>
2.<U1 0>
7.L,2
1.<A[2] “07”>
2.<U1 0>
8.L,2
1.<A[2] “08”>
2.<U1 0>
.
.
.
24.L,2
1.<A[2] “24”>
2.<U1 0>

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (RequestMappingCheck)
L,3
1.< U4 0 > //DATAID
2.< U4 185> //CEID

3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] “2010052712504500” > // Clock
2. < U1 1 > // PortID
3. L,24 // SlotList
1.L,2
1. <A[2] “01” >
2. <U1 1 >
2.L,2
1. <A[2] “02” >
2. <U1 1 >
3.L,2
1. <A[2] “03” >
2. <U1 1 >
4.L,2
1. <A[2] “04” >
2. <U1 0 >
5.L,2
1. <A[2] “05” >
2. <U1 0 >
6.L,2
1. <A[2] “06” >
2. <U1 0 >
7.L,2
1. <A[2] “07” >
2. <U1 0 >
8.L,2
1. <A[2] “08” >
2. <U1 0 >
.
.
24.L,2
1. <A[2] “24” >

2. <U1 0 >

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAPPINGCHECK)

L,4

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[17] “REPLYMAPPINGCHECK” > // RCMD
4. L,2
1. L,2
 1. < A[10] ”PORTID” >
 2. < U1 1>
2. L,2
 1. < A[6] ”RESULT” >
 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712504500” > // Clock
 2. < U1 1 > // PortID
 3. < A[3] “MPC” > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S1F3 H -> E Selected Equipment Status Request.

L,1

1.< U4 204 >

S1F4 H <- E Selected Equipment Status Data

L,24

1. L,2

1. < A[2] "01" >

2. <U1 1 >

2. L,2

1. < A[2] "02" >

2. <U1 1 >

3. L,2

1. < A[2] "03" >

2. <U1 1 >

4. L,2

1. < A[2] "04" >

2. <U1 0 >

5. L,2

1. < A[2] "05" >

2. <U1 0 >

6. L,2

1. < A[2] "06" >

2. <U1 0 >

7. L,2

1. < A[2] "07" >

2. <U1 0 >

8. L,2

1. < A[2] "08" >

2. <U1 0 >

24. L,2

1. < A[2] "24" >
2. <U1 0 >

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (LOADSTART)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (LOADSTART)

L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[9] " LOADSTART" > // RCMD

4.L,7

1. L,2

1. < A[5] "LOTID" >
2. < A[20] "ABCDEFGHIJKLMNPQRST" >

2. L,2

1. < A[9] " SRCPORTID" >
2. <U1 1 >

3. L,2

1. < A[10] " DESTPORTID" >
2. <U1 0 >

4. L,2

1. < A[3] " QTY" >
2. <U4 10 >

5. L,2

1. < A[5] "ORDER" >
2. L,24

1. <A[2] "03" >
2. <A[2] "02" >
3. <A[2] "01" >
4. <A[0] "" >
5. <A[0] "" >
6. <A[0] "" >

7. <A[0] “” >

8. <A[0] “” >

.

.

24. <A[0] “” >

6. L,2

1. < A[9] ”LOTPANELS” >

2. L,10

1. <A[15] “0000000000000001” >

2. <A[15] “0000000000000011” >

3. <A[15] “000000000000111” >

4. <A[15] “000000000011111” >

5. <A[15] “000000000111111” >

6. <A[15] “000000001111111” >

7. <A[15] “000000011111111” >

8. <A[15] “000000111111111” >

9. <A[15] “000001111111111” >

10. <A[15] “000011111111111” >

7. L,2

1. < A[9] ”SRC PANELS” >

2. L,24

1. < A[15] “000011111111111” > // Slot1

2. < A[15] “000000111111111” > // Slot2

3. < A[15] “000000000000011” > // Slot3

4. < A[0] “” > // Slot4

5. < A[0] “” > // Slot5

6. < A[0] “” > // Slot6

7. < A[0] “” > // Slot7

8. < A[0] “” > // Slot8

.

.

24. < A[0] “” > // Slot24

L,2

1. < B[1] 0 >
2. L,0

The transportation of the panel started from the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E

The event report send (LoadStarted)

L,3

1. < U4 0 > //DATAID
2. < U4 151> //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
1. < A[16] "2010052712504500" > // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
3. < U1 1 > // Source PortID
4. < U1 0 > // Dest PortID

S6F12 H -> E

The event report Ack.

<B[1] 0 >

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E

The event report send (UnloadedFromMag)

L,3

```

1. < U4 0 >           //DATAID
2. < U4 121 >         //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,4
      1. < A[16] "2010052712504500" >          // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
      3. < A[0] "" >                            // PanelID
      4. < A[2] "03" >                          // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 120 >         //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,6
      1. < A[16] "2010052712504500" >          // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
      3. < A[15] "000000000000011" >              // PanelID
      4. < A[5] "Front" >                         // Orientation
      5. < U1 0 >                                // ResultCode
      6. < A[2] "03" >                          // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (UnloadedFromMag)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 121 >         //CEID

```

```

3. L,1
  1. L,2
    1. < RPTID >
    2. L,4
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
      3. < A[0] "" >                            // PanelID
      4. < A[2] "02" >                          // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

```

1. < U4 0 >                  //DATAID
2. < U4 120 >                //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,6
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
      3. < A[15] "00000011111111" >              // PanelID
      4. < A[5] "Front" >                          // Orientation
      5. < U1 0 >                                  // ResultCode
      6. < A[2] "02" >                              // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (UnloadedFromMag)
L,3

```

1. < U4 0 >                  //DATAID
2. < U4 121 >                //CEID
3. L,1
  1. L,2

```

1. < RPTID >
2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "01" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "00001111111111" > // PanelID
 4. < A[5] "Front" > // Orientation
 5. < U1 0 > // ResultCode
 6. < A[2] "01" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Panel load to process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToTool)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 127> //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
 - 3. < A[15] “000000000000011” > // PanelID
 - 4. < A[2] “03” > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (LoadedToTool)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 127> //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
 - 3. < A[15] “000000111111111” > // PanelID
 - 4. < A[2] “02” > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (LoadedToTool)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 127> //CEID
- 3. L,1

1. L,2

1. < RPTID >

2. L,4

1. < A[16] “2010052712504500” >	// Clock
2. < A[20] “ABCDEFGHIJKLMNPQRST” >	// LotID
3. < A[15] “00001111111111” >	// PanelID
4. < A[2] “01” >	// SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

All panels have been loaded to tool (Only once).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadToToolCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadToToolCompleted)

L,3

1. < U4 0 > //DATAID

2. < U4 131 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,5

1. < A[16] “2010052712504500” >	// Clock
---------------------------------	----------

2. < A[20] “ABCDEFGHIJKLMNPQRST” >	// LotID
------------------------------------	----------

3. < U1 1 >	// Source PortID
-------------	------------------

4. < U1 0 >	// Dest PortID
-------------	----------------

5. L,24	// PanelList
---------	--------------

1. L,**4**

1. < A[15] “00001111111111” >	// Panel ID
-------------------------------	-------------

2. < A[2] “01” >	// SlotID
------------------	-----------

3. < U1 0 >	// ResultCode
-------------	---------------

4. < A[4] “Back” >	// Orientation
--------------------	----------------

2. L,**4**

1. < A[15] “00000011111111” >
 2. < A[2] “02” >
 3. < U1 0 >
 4. < A[4] “Back” >
 3. L,4
 1. < A[15] “000000000000011” >
 2. < A[2] “03” >
 3. < U1 0 >
 4. < A[4] “Back” >
 4. L,4
 1. < A[0] “” >
 2. < A[0] “04” >
 3. < U1 0 >
 4. < A[4] “Back” >
 5. L,4
 1. < A[0] “” >
 2. < A[0] “05” >
 3. < U1 0 >
 4. < A[4] “Back” >
 6. L,4
 1. < A[0] “” >
 2. < A[0] “06” >
 3. < U1 0 >
 4. < A[4] “Back” >
 7. L,4
 1. < A[0] “” >
 2. < A[0] “07” >
 3. < U1 0 >
 4. < A[4] “Back” >
 8. L,4
 1. < A[0] “” >
 2. < A[0] “08” >
 3. < U1 0 >
 4. < A[4] “Back” >
- .
- .

24. L,**4**

1. < A[0] “” >
2. < A[0] “24” >
3. < U1 0 >
- 4. < A[4] “Back” >**

S6F12 H -> E The event report Ack.

<B[1] 0 >

AES stops the load port.				
Host	SxFx		SxFx	Equipment
The host command send (STOP)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (STOP)

L,**4**

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[4] ”STOP” > // RCMD
4. L,1
1. L,2
 1. < A[6] ”PORTID” >
 2. < U1 1 >

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

The load port undocks the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MOR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] "MOR" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operator unloads a magazine from the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagazineUndocked)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (PortStatusChange=MIR)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagazineUndocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 182 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[6] "M00001" > // MagazineID
 - 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)
L,3
1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] "2010052712504500" > // Clock
2. < U1 1 > // PortID
3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.2 Unloader Scenario

9.2.1 Single Magazine Basic Scenario

AES specifies the process program for the load port.				
Host	SxFx		SxFx	Equipment
The host command send (PP-SELECT)	S2F49	->		
		<-	S2F50	The host command Ack.
		<-	S6F11	The event report send (PP-Selected)
The event report Ack	S6F12	->		

S2F49 H -> E The host command send (PP-SELECT)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] “” > //OBJSPEC
- 3. < A[9] ”PP-SELECT” > // RCMD
- 4. L,1
- 1. L,2
 - 1. < A[4] ”PPID” >
 - 2. < A[25] “ABCDEFGHIJKLMNOPQRSTUVWXYZ” >

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

S6F11 H <- E The event report send (PP-Selected)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 128 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,2
 - 1. < A[16] “2010052712474500” > // Clock

2. < A[25] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // PPID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MIR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712474500” > // Clock
 2. < U1 1 > // PortID
 3. < A[3] “MIR” > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorIdCheck)

L,3

1. < U4 0 > //DATAID
2. < U4 183 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,2

1. < A[16] "2010052712504500" > // Clock

2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)

L,4

1. < U4 0 > //DATAID

2. < A[0] "" > //OBJSPEC

3. < A[20] "REPLYOPERATORIDCHECK" > // RCMD

4.L,2

1. L,2

1. < A[10] "OPERATORID" >

2. < A[9] "123456789" >

2. L,2

1. < A[6] "RESULT" >

2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >

2. L,0

Operater reads the Magazine ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)
The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestMagazineDock)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 180 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,2
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[6] "M00001" > // MagazineID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD
- 4. L,2
 - 1. L,2
 - 1. < A[10] "MAGAZINEID" >
 - 2. < A[6] "M00001" >
 - 2. L,2
 - 1. < A[6] "RESULT" >
 - 2. < U1 0 >

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

Operator loads a magazine to the load port.				
Host	SxFx		SxFx	Equipment

		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 181 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[6] "M00001" > // MagazineID
 - 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Unloader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (RequestMappingCheck)
The event report Ack.	S6F12	->		
The host command send (REPLYMAPPINGCHECK)	S2F49	->		
		<-	S2F50	
		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

S6F11 H <- E

The event report send (MappingCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 136> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < U1 1 > // PortID
 - 3. L,24 // SlotList
 - 1.L,2
 - 1. <A[2] “01” >
 - 2. <U1 0 >
 - 2.L,2
 - 1. <A[2] “02” >

2. <U1 0 >
3.L,2
1. <A[2] “03” >
2. <U1 0 >
4.L,2
1. <A[2] “04” >
2. <U1 0 >
5.L,2
1. <A[2] “05” >
2. <U1 0 >
6.L,2
1. <A[2] “06” >
2. <U1 0 >
7.L,2
1. <A[2] “07” >
2. <U1 0 >
8.L,2
1. <A[2] “08” >
2. <U1 0 >

.

.

.

24.L,2
1. <A[2] “24” >
2. <U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (RequestMappingCheck)
L,3
1. < U4 0 > //DATAID
2. < U4 185> //CEID
3. L,1
1. L,2
1. < RPTID >

```

2. L,3
  1. < A[16] “2010052712504500” >           // Clock
  2. < U1 1 >                                // PortID
  3. L,24                                     // SlotList
    1.L,2
      1. <A[2] “01” >
      2. <U1 1 >
    2.L,2
      1. <A[2] “02” >
      2. <U1 1 >
    3.L,2
      1. <A[2] “03” >
      2. <U1 1 >
    4.L,2
      1. <A[2] “04” >
      2. <U1 0 >
    5.L,2
      1. <A[2] “05” >
      2. <U1 0 >
    6.L,2
      1. <A[2] “06” >
      2. <U1 0 >
    7.L,2
      1. <A[2] “07” >
      2. <U1 0 >
    8.L,2
      1. <A[2] “08” >
      2. <U1 0 >
    .
    .
    .
  24.L,2
    1. <A[2] “24” >
    2. <U1 0 >

```

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAPPINGCHECK)

L,4

1. < U4 0 > //DATAID
 2. < A[0] ““ > //OBJSPEC
 3. < A[17] “REPLYMAPPINGCHECK” > // RCMD
 4. L,2
 1. L,2
 1. < A[10] ”PORTID” >
 2. < U1 1>
 2. L,2
 1. < A[6] ”RESULT” >
 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
 - 2. < U4 141 > //CEID
 - 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] “MPC” > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S1F3 H -> E Selected Equipment Status Request.

L,1

1.< U4 204 >

S1F4 H <- E Selected Equipment Status Data

L,24

1. L,2

1. < A[2] "01" >

2. <U1 0 >

2. L,2

1. < A[2] "02" >

2. <U1 0 >

3. L,2

1. < A[2] "03" >

2. <U1 0 >

4. L,2

1. < A[2] "04" >

2. <U1 0 >

5. L,2

1. < A[2] "05" >

2. <U1 0 >

6. L,2

1. < A[2] "06" >

2. <U1 0 >

7. L,2

1. < A[2] "07" >

2. <U1 0 >

8. L,2

1. < A[2] "08" >

2. <U1 0 >

.

.

.

24. L,2

1. < A[2] "24" >

2. <U1 0 >

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (UNLOADSTART)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (UNLOADSTART)

L,4

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[11] ” UNLOADSTART” > // RCMD
4. L,6
 1. L,2
 1. < A[5] ”LOTID” >
 2. < A[20] “ABCDEFGHIJKLMNPQRST” >
 2. L,2
 1. < A[9] ” SRCPORTID” >
 2. <U1 0 >
 3. L,2
 1. < A[10] ” DESTPORTID” >
 2. <U1 1 >
 4. L,2
 1. < A[3] ” QTY” >
 2. <U4 10 >
 5. L,2
 1. < A[9] ”LOTPANELS” >
 2. L,10
 1. <A[15] “0000000000000001” >
 2. <A[15] “00000000000000011” >
 3. <A[15] “0000000000000111” >
 4. <A[15] “0000000000111111” >
 5. <A[15] “00000000001111111” >
 6. <A[15] “00000000011111111” >
 7. <A[15] “0000000111111111” >
 8. <A[15] “0000001111111111” >
 9. <A[15] “0000011111111111” >

10. <A[15] "0000111111111111" >
6. L,2
 1. < A[10] "DESTPANELS" >
 2. L,24
 1. < A[15] "0000111111111111" > // Slot1
 2. < A[15] "0000001111111111" > // Slot2
 3. < A[15] "0000000000000011" > // Slot3
 4. < A[0] "" > // Slot4
 5. < A[0] "" > // Slot5
 6. < A[0] "" > // Slot6
 7. < A[0] "" > // Slot7
 8. < A[0] "" > // Slot8
 - .
 - .
 - .
 24. < A[0] "" > // Slot24

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

The transportation of the panel started to the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadStarted)

L,3

1. < U4 0 > //DATAID
2. < U4 152> //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4

1. < A[16] “2010052712504500” > // Clock
2. < A[20] “ABCDEFGHIJKLMNPQRST“ > // LotID
3. < U1 0 > // Source PortID
4. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

A panel unloaded from the process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromTool)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromTool)

L,3

1. < U4 0 > //DATAID
2. < U4 126 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "00" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "00000000000011" > // PanelID
 4. < A[5] "Front" > // Orientation

```

5. < U1 0 >                                // ResultCode
6. < A[2] "00" >                            // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (UnloadedFromTool)

L,3

```

1. < U4 0 >                                //DATAID
2. < U4 126 >                             //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
1. < A[16] "2010052712504500" >          // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
3. < A[0] "" >                            // PanelID
4. < A[2] "00" >                            // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

```

1. < U4 0 >                                //DATAID
2. < U4 120 >                             //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
1. < A[16] "2010052712504500" >          // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
3. < A[15] "00000011111111" >              // PanelID
4. < A[5] "Front" >                         // Orientation
5. < U1 0 >                                // ResultCode
6. < A[2] "00" >                            // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (UnloadedFromTool)
L,3

1. < U4 0 > //DATAID
2. < U4 126 > //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "00" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "00001111111111" > // PanelID
 4. < A[5] "Front" > // Orientation
 5. < U1 0 > // ResultCode
 6. < A[2] "00" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

A panel load to unloader port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 122 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,5
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[15] "000000000000011" > // PanelID
 - 4. < A[2] "03" > // SlotID
 - 5. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (LoadedToMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 122 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,5
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID

```

3. < A[15] "00000011111111" >           // PanelID
4. < A[2] "02" >                         // SlotID
5. <U1 1 >                                // Dest PortID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (LoadedToMag)

L,3

```

1. < U4 0 >                      //DATAID
2. < U4 122 >                     //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,5
1. < A[16] "2010052712504500" >      // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" >    // LotID
3. < A[15] "00001111111111" >          // PanelID
4. < A[2] "01" >                      // SlotID
5. <U1 1 >                                // Dest PortID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

A last panel unloaded from the process tool (Only once).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadFromToolCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadFromToolCompleted)
L,3

```

1. < U4 0 >                      //DATAID
2. < U4 132 >                     //CEID
3. L,1
1. L,2
1. < RPTID >

```

2. L,5
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // LotID
 3. <U1 0 > // Source PortID
 4. <U1 1 > // Dest PortID
 5. L,24 // PanelList
 1. L,**4**
 1. < A[15] “00001111111111” > // PanelID
 2. < A[1] “1” > // SlotID
 3. < U1 0 > // ResultCode
 - 4. <A[4] “Back” >** // Orientation
 2. L,**4**
 1. < A[15] “00000011111111” >
 2. < A[2] “02” >
 3. < U1 0 >
 - 4. <A[4] “Back” >**
 3. L,**4**
 1. < A[15] “00000000000001” >
 2. < A[2] “03” >
 3. < U1 0 >
 - 4. <A[4] “Back” >**
 4. L,**4**
 1. < A[0] “” >
 2. < A[0] “04” >
 3. < U1 0 >
 - 4. <A[4] “Back” >**
 5. L,**4**
 1. < A[0] “” >
 2. < A[0] “05” >
 3. < U1 0 >
 - 4. <A[4] “Back” >**
 6. L,**4**
 1. < A[0] “” >
 2. < A[0] “06” >
 3. < U1 0 >
 - 4. <A[4] “Back” >**

7. L,**4**

1. < A[0] “” >
2. < A[0] “07” >
3. < U1 0 >
- 4. <A[4] “Back” >**

8. L,**4**

1. < A[0] “” >
2. < A[0] “08” >
3. < U1 0 >
- 4. <A[4] “Back” >**

24. L,**4**

1. < A[0] “” >
2. < A[0] “24” >
3. < U1 0 >
- 4. <A[4] “Back” >**

S6F12 H -> E The event report Ack.

<B[1] 0 >

AES stops the load port.				
Host	SxFx		SxFx	Equipment
The host command send (STOP)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (STOP)

L,**4**

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[4] ”STOP” > // RCMD
4. L,1
1. L,2
 1. < A[6] ”PORTID” >
 2. < U1 1 >

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

The load port undocks the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MOR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] "2010052712474500" > // Clock
2. < U1 1 > // PortID
3. < A[3] "MOR" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operator unloads a magazine from the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagazineUndocked)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (PortStatusChange=MIR)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagazineUndocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 182 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[6] "M00001" > // MagazineID
 - 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712474500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.3 Loader / Unloader Scenario

9.3.1 Transfer Magazine to Magazine Scenario

AES specifies the process program for the load port.				
Host	SxFx		SxFx	Equipment

The host command send (PP-SELECT)	S2F49	->		
		<-	S2F50	The host command Ack.
		<-	S6F11	The event report send (PP-Selected)
The event report Ack	S6F12	->		

S2F49 H -> E The host command send (PP-SELECT)

L,4

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[9] "PP-SELECT" > // RCMD
- 4.L,1
1. L,2
 1. < A[4] "PPID" >
 2. < A[25] "ABCDEFGHIJKLMNPQRSTUVWXYZ" >

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (portstatuschange=MIR)
The event report Ack	S6F12	->		

(Source magazine)

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
 1. L,2
 1. < RPTID >

2. L,3

- 1. < A[16] “2010052712474500” > // Clock
- 2. < U1 1 > // PortID
- 3. < A[3] “MIR” > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

(Dest. Magazine)

S6F11 H <- E The event report send (PortStatusChange)
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,3
- 1. < A[16] “2010052712474500” > // Clock
- 2. < U1 2 > // PortID
- 3. < A[3] “MIR” > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorIdCheck)
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 183 > //CEID
- 3. L,1
- 1. L,2

1. < RPTID >

2. L,2

1. < A[16] "2010052712504500" > // Clock

2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)
L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[20] "REPLYOPERATORIDCHECK" > // RCMD
4. L,2
 1. L,2
 1. < A[10] "OPERATORID" >
 2. < A[9] "123456789" >
 2. L,2
 1. < A[6] "RESULT" >
 2. < U1 0>

S2F50 H <- E The host command Ack.
L,2
1. < B[1] 0 >
2. L,0

Operater reads the Magazine ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)
The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

(Source magazine)

S6F11 H <- E The event report send (RequestMagazineDock)
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 180 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,2
- 1. < A[16] "2010052712504500" > // Clock
- 2. < A[6] "M00001" > // MagazineID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)
L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD
- 4. L,2
- 1. L,2
 - 1. < A[10] "MAGAZINEID" >
 - 2. < A[6] "M00001" >
- 2. L,2
 - 1. < A[6] "RESULT" >
 - 2. < U1 0>

S2F50 H <- E The host command Ack.
L,2

- 1. < B[1] 0 >
- 2. L,0

(Dest. Magazine)

S6F11 H <- E The event report send (RequestMagazineDock)
L,3

- 1. < U4 0 > //DATAID

```

2. < U4 180 >           //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,2
1. < A[16] "2010052712504500" >      // Clock
2. < A[8] "M-000002" >                // MagazineID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)
L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD
4. L,2
 1. L,2
 1. < A[10] "MAGAZINEID" >
 2. < A[6] "M00002" >
 2. L,2
 1. < A[6] "RESULT" >
 2. < U1 0 >

S2F50 H <- E The host command Ack.
L,2

1. < B[1] 0 >
2. L,0

Operator loads a magazine to the port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)

The event report Ack.	S6F12	->		
-----------------------	-------	----	--	--

(Source magazine)

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 181 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[6] "M00001" > // MagazineID
 - 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Loader/Unloader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment

		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (RequestMappingCheck)
The event report Ack	S6F12	->		
The host command send (REPLYMAPPINGCHECK)	S2F49	->		
		<-	S2F50	The host command Ack
		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

(Source magazine)

S6F11 H <- E The event report send (MappingCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 136> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < U1 1 > // PortID
 - 3. L,24 // SlotList
 - 1.L,2
 - 1. <A[2] “01” >
 - 2. <U1 0 >
 - 2.L,2
 - 1. <A[2] “02” >
 - 2. <U1 0 >
 - 3.L,2
 - 1. <A[2] “03” >

```

2. <U1 0 >
4.L,2
  1. <A[2] "04" >
  2. <U1 0 >
5.L,2
  1. <A[2] "05" >
  2. <U1 0 >
6.L,2
  1. <A[2] "06" >
  2. <U1 0 >
7.L,2
  1. <A[2] "07" >
  2. <U1 0 >
8.L,2
  1. <A[2] "08" >
  2. <U1 1 >
.
```

```

24.L,2
  1. <A[2] "24" >
  2. <U1 0 >
```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (RequestMappingCheck)

L,3

1. < U4 0 > //DATAID
2. < U4 185> //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] "2010052712504500" > // Clock
 2. < U1 1 > // PortID

3. L,24 // SlotList
1.L,2
1. <A[2] “01” >
2. <U1 1 >
2.L,2
1. <A[2] “02” >
2. <U1 1 >
3.L,2
1. <A[2] “03” >
2. <U1 1 >
4.L,2
1. <A[2] “04” >
2. <U1 0 >
5.L,2
1. <A[2] “05” >
2. <U1 0 >
6.L,2
1. <A[2] “06” >
2. <U1 0 >
7.L,2
1. <A[2] “07” >
2. <U1 0 >
8.L,2
1. <A[2] “08” >
2. <U1 0 >
.
.
.
24.L,2
1. <A[2] “24” >
2. <U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAPPINGCHECK)

L,4

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[17] “REPLYMAPPINGCHECK” > // RCMD
- 4.L,2
 1. L,2
 1. < A[10] ”PORTID” >
 2. < U1 1>
 2. L,2
 1. < A[6] ”RESULT” >
 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712504500” > // Clock
 2. < U1 1 > // PortID
 3. < A[3] ”MPC” > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S1F3 H -> E Selected Equipment Status Request.

L,1

- 1.< U4 204 >

S1F4 H <- E Selected Equipment Status Data
L,24

1. L,2
 1. <A[2] “01” >
 2. <U1 0 >
2. L,2
 1. <A[2] “02” >
 2. <U1 0 >
3. L,2
 1. <A[2] “03” >
 2. <U1 0 >
4. L,2
 1. <A[2] “04” >
 2. <U1 0 >
5. L,2
 1. <A[2] “05” >
 2. <U1 0 >
6. L,2
 1. <A[2] “06” >
 2. <U1 0 >
7. L,2
 1. <A[2] “07” >
 2. <U1 0 >
8. L,2
 1. <A[2] “08” >
 2. <U1 1 >
- .
- .
- .
24. L,2
 1. <A[2] “24” >
 2. <U1 0 >

Operator loads a magazine to the port.

Host	SxFx		SxFx	Equipment
------	------	--	------	-----------

		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)
The event report Ack.	S6F12	->		

(Dest. Magazine)

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 2 > // PortID
 - 3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 181 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 2 > // PortID
 - 3. < A[6] "M00002" > // MagazineID
 - 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Loader/Unloader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

(Dest. Magazine)

S6F11 H <- E The event report send (MappingCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 136> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < U1 2 > // PortID
 - 3. L,24 // SlotList
 - 1.L,2
 - 1. <A[2] “01” >
 - 2. <U1 0 >
 - 2.L,2
 - 1. <A[2] “02” >
 - 2. <U1 0 >
 - 3.L,2
 - 1. <A[2] “03” >
 - 2. <U1 0 >

4.L,2
 1. <A[2] “04” >
 2. <U1 0 >
5.L,2
 1. <A[2] “05” >
 2. <U1 0 >
6.L,2
 1. <A[2] “06” >
 2. <U1 0 >
7.L,2
 1. <A[2] “07” >
 2. <U1 1 >
8.L,2
 1. <A[2] “08” >
 2. <U1 1 >

.

24.L,2
 1. <A[2] “24” >
 2. <U1 0 >

S6F12 H -> E The event report Ack.
 <B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)
 L,3
 1. < U4 0 > //DATAID
 2. < U4 141 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712504500” > // Clock
 2. < U1 2 > // PortID
 3. < A[3] “MPC” > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

S1F3 H -> E Selected Equipment Status Request.
L,1
1.< U4 205 >

S1F4 H <- E Selected Equipment Status Data
L,24

1. L,2
 1. < A[2] "01" >
 2. <U1 0 >
2. L,2
 1. < A[2] "02" >
 2. <U1 0 >
3. L,2
 1. < A[2] "03" >
 2. <U1 0 >
4. L,2
 1. < A[2] "04" >
 2. <U1 0 >
5. L,2
 1. < A[2] "05" >
 2. <U1 0 >
6. L,2
 1. < A[2] "06" >
 2. <U1 0 >
7. L,2
 1. < A[2] "07" >
 2. <U1 1 >
8. L,2
 1. < A[2] "08" >
 2. <U1 1 >

.

24. L,2

1. <A[2] "24" >

2. <U1 0 >

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (TRANSFERMAGTOMAG)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (TRANSFERMAGTOMAG)

L,4

1. < U4 0 > //DATAID

2. < A[0] " " > //OBJSPEC

3. < A[16] " TRANSFERMAGTOMAG" > // RCMD

4.L,8

1. L,2

1. < A[5] "LOTID" >

2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" >

2. L,2

1. < A[9] " SRCPORTID" >

2. <U1 1 >

3. L,2

1. < A[10] " DESTPORTID" >

2. <U1 2 >

4. L,2

1. < A[3] " QTY" >

2. <U4 3 >

5. L,2

1. < A[5] "ORDER" >

2. L,24

1. <A[2] "08" >

2. <A[0] " " >

3. <A[0] " " >

4. <A[0] " " >

```

5. <A[0] “” >
6. <A[0] “” >
7. <A[0] “” >
8. <A[0] “” >

.
.

24. <A[0] “” >

6. L,2
1. < A[9] ”LOTPANELS” >
2. L,3
1. <A[15] “0000000000000001” >
2. <A[15] “0000000000000011” >
3. <A[15] “000000000000111” >

7. L,2
1. < A[9] ”SRCPANELS” >
2. L,24
1. < A[0] “” > // Slot1
2. < A[0] “” > // Slot2
3. < A[0] “” > // Slot3
4. < A[0] “” > // Slot4
5. < A[0] “” > // Slot5
6. < A[0] “” > // Slot6
7. < A[0] “” > // Slot7
8. < A[15] “000000000000111” > // Slot8

.
.

24. < A[0] “” > // Slot24

8. L,2
1. < A[10] ”DESTPANELS” >
2. L,24
1. L,2
1. < A[0] “” > // Slot1
2. < A[0] “” > // Slot2
3. < A[0] “” > // Slot3

```

```

4. < A[0] “” >                                // Slot4
5. < A[0] “” >                                // Slot5
6. < A[15] “000000000000111” >                // Slot6
7. < A[15] “000000000000001” >                // Slot7
8. < A[15] “00000000000011” >                // Slot8

.
.

24. < A[0] “” >                                // Slot24

```

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

The transportation of the panel started to the magazine.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagToMagStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagToMagStarted)

L,3

1. < U4 0 > //DATAID
2. < U4 153> //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRST“ > // LotID
 3. < U1 1 > // Source PortID
 4. < U1 2 > // Dest PortID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 121 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[0] "" > // PanelID
 - 4. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 120 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,6
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[15] "000000000000111" > // PanelID

```

4. < A[5] "Front" >           // Orientation
5. < U1 0 >                 // ResultCode
6. < A[2] "08" >             // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

A panel load to unloader port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 122 >          //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,5
1. < A[16] "2010052712504500" >           // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" >   // LotID
3. < A[15] "000000000000111" >               // PanelID
4. < A[2] "06" >                         // SlotID
5. < U1 1 >                           // Dest PortID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

All panels were moved from loader port to unloader port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagToMagCompleted)

The event report Ack.	S6F12	->		
-----------------------	-------	----	--	--

S6F11 H <- E	The event report send (MagToMagCompleted)	
L,3		
1. < U4 0 >	//DATAID	
2. < U4 133 >	//CEID	
3. L,1		
1. L,2		
1. < RPTID >		
2. L,5		
1. < A[16] "2010052712504500" >	// Clock	
2. < A[20] "ABCDEFGHIJKLMNPQRST" >	// LotID	
3. < U1 1 >	// Source PortID	
4. < U1 2 >	// Dest PortID	
5. L,24	// PanelList	
1. L, 4		
1. < A[0] "" >	// PanelID	
2. < A[2] "01" >	// SlotID	
3. < U1 0 >	// ResultCode	
4. < A[4] "Back" >	// Orientation	
2. L, 4		
1. < A[0] "" >		
2. < A[2] "02" >		
3. < U1 0 >		
4. < A[4] "Back" >		
3. L, 4		
1. < A[0] "" >		
2. < A[2] "03" >		
3. < U1 0 >		
4. < A[4] "Back" >		
4. L, 4		
1. < A[0] "" >		
2. < A[2] "04" >		
3. < U1 0 >		
4. < A[4] "Back" >		
5. L, 4		

1. < A[0] “” >
 2. < A[2] “05” >
 3. < U1 0 >
 4. < A[4] “Back” >
 6. L,**4**
 1. < A[15] “000000000000111” >
 2. < A[2] “06” >
 3. < U1 0 >
 4. < A[4] “Back” >
 7. L,**4**
 1. < A[0] “” >
 2. < A[2] “07” >
 3. < U1 0 >
 4. < A[4] “Back” >
 8. L,**4**
 1. < A[0] “” >
 2. < A[2] “08” >
 3. < U1 0 >
 4. < A[4] “Back” >
- .
24. L,**4**
 1. < A[0] “” >
 2. < A[2] “24” >
 3. < U1 0 >
 4. < A[4] “Back” >

S6F12 H -> E The event report Ack.
<B[1] 0 >

AES stops the load port.				
Host	SxFx		SxFx	Equipment
The host command send (STOP)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (STOP)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] “” > //OBJSPEC
- 3. < A[4] ”STOP” > // RCMD
- 4.L,1
- 1. L,2
 - 1. < A[6] ”PORTID” >
 - 2. < U1 0 >

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

The load port undocks the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MOR)
The event report Ack	S6F12	->		

(Source magazine)

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] ”MOR” > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

(Dest. Magazine)

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 2 > // PortID
 - 3. < A[3] "MOR" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operator unloads a magazine from the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagazineUndocked)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (PortStatusChange=MIR)
The event report Ack.	S6F12	->		

(Source magazine)

S6F11 H <- E The event report send (MagazineUndocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 182 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock

```

2. < U1 1 >           // PortID
3. < A[6] "M00001" >   // MagazineID
4. < A[9] "123456789" > // OperatorID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)

L,3

```

1. < U4 0 >           //DATAID
2. < U4 141 >          //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] "2010052712504500" > // Clock
2. < U1 1 >           // PortID
3. < A[3] "MIR" >      // PortState

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

(Dest. Magazine)

S6F11 H <- E The event report send (MagazineUndocked)

L,3

```

1. < U4 0 >           //DATAID
2. < U4 182 >          //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
1. < A[16] "2010052712504500" > // Clock
2. < U1 2 >           // PortID
3. < A[6] "M00002" >   // MagazineID
4. < A[9] "123456789" > // OperatorID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)
L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] "2010052712504500" > // Clock
2. < U1 2 > // PortID
3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.3.2 Magazine check Scenario

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (portstatuschange=MIR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)
L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] "2010052712474500" > // Clock
2. < U1 1 > // PortID

3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorIdCheck)

L,3

1. < U4 0 > //DATAID
2. < U4 183 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,2
 1. < A[16] "2010052712504500" > // Clock
 2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)

L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[20] "REPLYOPERATORIDCHECK" > // RCMD
4. L,2
 1. L,2
 1. < A[10] "OPERATORID" >
 2. < A[9] "123456789" >
 2. L,2
 1. < A[6] "RESULT" >

2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >

2. L,0

Operater reads the Magazine ID by barcode reader.				
Host	SxRx		SxTx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)
The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestMagazineDock)

L,3

1. < U4 0 > //DATAID

2. < U4 180 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,2

1. < A[16] "2010052712504500" > // Clock

2. < A[6] "M00001" > // MagazineID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)

L,4

1. < U4 0 > //DATAID

2. < A[0] "" > //OBJSPEC

3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD

4.L,2

1. L,2
 1. < A[10] "MAGAZINEID" >
 2. < A[6] "M00001" >
2. L,2
 1. < A[6] "RESULT" >
 2. < U1 0>

S2F50 H <- E The host command Ack.

- L,2
1. < B[1] 0 >
 2. L,0

Operator loads a magazine to the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

- L,3
1. < U4 0 > //DATAID
 2. < U4 141 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] "2010052712504500" > // Clock
 2. < U1 1 > // PortID
 3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)

L,3

1. < U4 0 > //DATAID
2. < U4 181 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < U1 1 > // PortID
 3. < A[6] "M00001" > // MagazineID
 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Loader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (RequestMappingCheck)
The event report Ack	S6F12	->		
The host command send (REPLYMAPPINGCHECK)	S2F49	->		
		<-	S2F50	The host command Ack
		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

S6F11 H <- E The event report send (MappingCompleted)

L,3

1. < U4 0 > //DATAID
2. < U4 136> //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] “2010052712504500” > // Clock
2. < U1 1 > // PortID
3. L,24 // SlotList
1.L,2
1. <A[2] “01” >
2. <U1 1 >
2.L,2
1. <A[2] “02” >
2. <U1 1 >
3.L,2
1. <A[2] “03” >
2. <U1 0 >
4.L,2
1. <A[2] “04” >
2. <U1 0 >
5.L,2
1. <A[2] “05” >
2. <U1 0 >
6.L,2
1. <A[2] “06” >
2. <U1 0 >
7.L,2
1. <A[2] “07” >
2. <U1 0 >
8.L,2
1. <A[2] “08” >
2. <U1 0 >

.

.

24.L,2
 1. <A[2] “24” >
 2. <U1 0 >

S6F12 H -> E The event report Ack.
 <B[1] 0 >

S6F11 H <- E The event report send (RequestMappingCheck)

L,3
 1. < U4 0 > //DATAID
 2. < U4 185> //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712504500” > // Clock
 2. < U1 1 > // PortID
 3. L,24 // SlotList
 1.L,2
 1. <A[2] “01” >
 2. <U1 1 >
 2.L,2
 1. <A[2] “02” >
 2. <U1 1 >
 3.L,2
 1. <A[2] “03” >
 2. <U1 1 >
 4.L,2
 1. <A[2] “04” >
 2. <U1 0 >
 5.L,2
 1. <A[2] “05” >
 2. <U1 0 >
 6.L,2
 1. <A[2] “06” >
 2. <U1 0 >

7.L,2
1. <A[2] "07" >
2. <U1 0 >

8.L,2
1. <A[2] "08" >
2. <U1 0 >

.

24.L,2
1. <A[2] "24" >
2. <U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAPPINGCHECK)

L,4
1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[17] "REPLYMAPPINGCHECK" > // RCMD
4.L,2
1. L,2
1. < A[10] "PORTID" >
2. < U1 1>
2. L,2
1. < A[6] "RESULT" >
2. < U1 0>

S2F50 H <- E The host command Ack.

L,2
1. < B[1] 0 >
2. L,0

S6F11 H <- E The event report send (PortStatusChange)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 141 >         //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,3
      1. < A[16] "2010052712504500" >      // Clock
      2. < U1 1 >                         // PortID
      3. < A[3] "MPC" >                   // PortState

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S1F3 H -> E Selected Equipment Status Request.
L,1
1.< U4 204 >

S1F4 H <- E Selected Equipment Status Data
L,24
 1. L,2
 1. < A[2] "01" >
 2. < U1 1 >
 2. L,2
 1. < A[2] "02" >
 2. < U1 1 >
 3. L,2
 1. < A[2] "03" >
 2. < U1 0 >
 4. L,2
 1. < A[2] "04" >
 2. < U1 0 >
 5. L,2
 1. < A[2] "05" >
 2. < U1 0 >
 6. L,2
 1. < A[2] "06" >

2. <U1 0 >
 7. L,2
 1. < A[2] “07” >
 2. <U1 0 >
 8. L,2
 1. < A[2] “08” >
 2. <U1 0 >

.

.

24. L,2
 1. < A[2] “24” >
 2. <U1 0 >

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (CHECKMAG)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (CHECKMAG)

L,4
 1. < U4 0 > //DATAID
 2. < A[0] “” > //OBJSPEC
 3. < A[8] ” CHECKMAG” > // RCMD
 4.L,4
 1. L,2
 1. < A[5] ”LOTID” >
 2. < A[20] “ABCDEFGHIJKLMNPQRST” >
 2. L,2
 1. < A[6] ” PORTID” >
 2. <U1 1 >
 3. L,2
 1. < A[9] ”LOTPANELS” >
 2. L,2
 1. < A[15] “000000000000111” >

2. <A[15] "0000000000000011" >

4. L,2

1. <A[9] "SRCPANELS" >

2. L,24

1. <A[15] "000000000000111" > // Slot1

2. <A[15] "0000000000000011" > // Slot2

3. <A[0] "" > // Slot3

4. <A[0] "" > // Slot4

5. <A[0] "" > // Slot5

6. <A[0] "" > // Slot6

7. <A[0] "" > // Slot7

8. <A[0] "" > // Slot8

.

.

24. <A[0] "" > // Slot24

S2F50 H <- E The host command Ack.

L,2

1. <B[1] 0 >

2. L,0

The transportation of the panel started from the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagCheckStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagCheckStarted)

L,3

1. <U4 0 > //DATAID

2. <U4 154> //CEID

3. L,1

1. L,2

1. <RPTID >

2. L,4

1. < A[16] “2010052712504500” > // Clock
2. < A[20] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // LotID
3. < U1 1 > // Source PortID
4. < U1 0 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		
A panel load to source magazine (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // LotID
 3. < A[0] “” > // PanelID
 4. < A[2] “01” > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "000000000000111" > // PanelID
 4. < A[5] "Front" > // Orientation
 5. < U1 0 > // ResultCode
 6. < A[2] "01" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (LoadedToMag)

L,3

1. < U4 0 > //DATAID
2. < U4 122 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,5
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "000000000000111" > // PanelID
 4. < A[2] "01" > // SlotID
 5. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (UnloadedFromMag)
L,3

1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
 3. < A[0] “” > // PanelID
 4. < A[2] “02” > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
 3. < A[15] “00000000000011” > // PanelID
 4. < A[5] “Front” > // Orientation
 5. < U1 0 > // ResultCode
 6. < A[2] “02” > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (LoadedToMag)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 122 >          //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,5
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >         // LotID
      3. < A[15] "000000000000011" >             // PanelID
      4. < A[2] "02" >                            // SlotID
      5. < U1 1 >                                // Dest PortID

```

All panels were checked.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagCheckedCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagCheckedCompleted)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 134 >          //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,5
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >         // LotID
      3. < U1 1 >                                // Source PortID
      4. < U1 0 >                                // Dest PortID
      5. L,24                                     // PanelList
        1. L,4
          1. < A[15] "000000000000111" >           // PanelID
          2. < A[2] "01" >                          // SlotID
          3. < U1 0 >                            // ResultCode
          4. < A[4] "Back" >                      // Orientation

```

2. L,**4**
 1. < A[15] “0000000000000011” >
 2. < A[2] “02” >
 3. < U1 0 >
 4. < A[4] “Back” >
3. L,**4**
 1. < A[0] “” >
 2. < A[0] “03” >
 3. < U1 0 >
 4. < A[4] “Back” >
4. L,**4**
 1. < A[0] “” >
 2. < A[0] “04” >
 3. < U1 0 >
 4. < A[4] “Back” >
5. L,**4**
 1. < A[0] “” >
 2. < A[0] “05” >
 3. < U1 0 >
 4. < A[4] “Back” >
6. L,**4**
 1. < A[0] “” >
 2. < A[0] “06” >
 3. < U1 0 >
 4. < A[4] “Back” >
7. L,**4**
 1. < A[0] “” >
 2. < A[0] “07” >
 3. < U1 0 >
 4. < A[4] “Back” >
8. L,**4**
 1. < A[0] “” >
 2. < A[0] “08” >
 3. < U1 0 >
 4. < A[4] “Back” >

24. L,4

1. < A[0] “” >
2. < A[0] “24” >
3. < U1 0 >
4. < A[4] “Back” >

S6F12 H -> E The event report Ack.
<B[1] 0 >

AES stops the load port.				
Host	SxFx		SxFx	Equipment
The host command send (STOP)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (STOP)

- L,4
1. < U4 0 > //DATAID
 2. < A[0] “” > //OBJSPEC
 3. < A[4] ”STOP” > // RCMD
 - 4.L,1
 1. L,2
 1. < A[6] ”PORTID” >
 2. < U1 1 >

S2F50 H <- E The host command Ack.

- L,2
1. < B[1] 0 >
 2. L,0

The load port undocks the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MOR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,3
- 1. < A[16] "2010052712474500" > // Clock
- 2. < U1 1 > // PortID
- 3. < A[3] "MOR" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operator unloads a magazine from the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagazineUndocked)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (PortStatusChange=MIR)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagazineUndocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 182 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
- 1. < A[16] "2010052712504500" > // Clock
- 2. < U1 1 > // PortID
- 3. < A[6] "M00001" > // MagazineID
- 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)
L,3
 1. < U4 0 > //DATAID
 2. < U4 141 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] "2010052712474500" > // Clock
 2. < U1 1 > // PortID
 3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.3.3 Mapping check Scenario

AES directs the mapping at times.				
Host	SxFx		SxFx	Equipment
The host command send (CHECKSLOT)	S2F49	->		
		<-	S2F50	The host command Ack.
		<-	S6F11	The event report send (CheckSlotStarted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack	S6F12	->		

S2F49 H -> E The host command send (CHECKSLOT)
L,4
 1. < U4 0 > //DATAID

```

2. < A[0] “” >           //OJBJSPEC
3. < A[9] ” CHECKSLOT” >   // RCMD
4.L,1
  1. L,2
    1. < A[6] ”PORTID” >
    2. < U1 1 >

```

S2F50 H <- E The host command Ack.
L,2
 1. < B[1] 0 >
 2. L,0

S6F11 H <- E The event report send (CheckSlotStarted)
L,3
 1. < U4 0 > //DATAID
 2. < U4 156> //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712504500” > // Clock
 2. < U1 1 > // PortID
 3. < A[3] ”MIC” > // PortStatus

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (MappingCompleted)
L,3
 1. < U4 0 > //DATAID
 2. < U4 136> //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] “2010052712504500” > // Clock

```
2. < U1 1 >          // PortID
3. L,24               // SlotList
1.L,2
1. <A[2] "01" >
2. <U1 1 >
2.L,2
1. <A[2] "02" >
2. <U1 1 >
3.L,2
1. <A[2] "03" >
2. <U1 1 >
4.L,2
1. <A[2] "04" >
2. <U1 1 >
5.L,2
1. <A[2] "05" >
2. <U1 1 >
6.L,2
1. <A[2] "06" >
2. <U1 0 >
7.L,2
1. <A[2] "07" >
2. <U1 0 >
8.L,2
1. <A[2] "08" >
2. <U1 0 >
.
.
.
24.L,2
1. <A[2] "24" >
2. <U1 0 >
```

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.3.4 Transfer Magazine to Magazine (for Line4690) Scenario

AES specifies the process program for the load port.				
Host	SxFx		SxFx	Equipment
The host command send (PP-SELECT)	S2F49	->		
		<-	S2F50	The host command Ack.
		<-	S6F11	The event report send (PP-Selected)
The event report Ack	S6F12	->		

S2F49 H -> E The host command send (PP-SELECT)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] “” > //OBJSPEC
- 3. < A[9] "PP-SELECT" > // RCMD
- 4.L,1
- 1. L,2
 - 1. < A[4] "PPID" >
 - 2. < A[25] “ABCDEFGHIJKLMNOPQRSTUVWXYZ“ >

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (portstatuschange=MIR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1

1. L,2

1. < RPTID >

2. L,3

1. < A[16] “2010052712474500” > // Clock

2. < U1 1 > // PortID

3. < A[3] “MIR” > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operator reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		
The host command send (REPLYOPERATORIDCHECK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestOperatorIdCheck)

L,3

1. < U4 0 > //DATAID

2. < U4 183 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,2

1. < A[16] “2010052712504500” > // Clock

2. < A[9] “123456789” > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)

L,4

1. < U4 0 > //DATAID

```

2. < A[0] “” >           //OBJSPEC
3. < A[20] ”REPLYOPERATORIDCHECK” >    // RCMD
4.L,2
  1. L,2
    1. < A[10] ”OPERATORID” >
    2. < A[9] “123456789” >
  2. L,2
    1. < A[6] ”RESULT” >
    2. < U1 0>

```

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

Operater reads the Magazine ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)
The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestMagazineDock)

L,3

1. < U4 0 > //DATAID
2. < U4 180 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,2
 1. < A[16] “2010052712504500” > // Clock
 2. < A[6] “M00001” > // MagazineID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)

L,4

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[17] “REPLYMAGAZINEDOCK” > // RCMD
- 4.L,2
 1. L,2
 1. < A[10] ”MAGAZINEID” >
 2. < A[6] “M00001” >
 2. L,2
 1. < A[6] ”RESULT” >
 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

Operator loads a magazine to the port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID
3. L,1
 1. L,2
 1. < RPTID >

2. L,3

- 1. < A[16] "2010052712504500" > // Clock
- 2. < U1 1 > // PortID
- 3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 181 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[6] "M00001" > // MagazineID
 - 4. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Loader/Unloader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (RequestMappingCheck)
The event report Ack	S6F12	->		
The host command send (REPLYMAPPINGCHECK)	S2F49	->		
		<-	S2F50	The host command Ack

		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

S6F11 H <- E The event report send (MappingCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 136> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock
 - 2. < U1 1 > // PortID
 - 3. L,24 // SlotList
 - 1.L,2
 - 1. <A[2] “01” >
 - 2. <U1 0 >
 - 2.L,2
 - 1. <A[2] “02” >
 - 2. <U1 0 >
 - 3.L,2
 - 1. <A[2] “03” >
 - 2. <U1 0 >
 - 4.L,2
 - 1. <A[2] “04” >
 - 2. <U1 0 >
 - 5.L,2
 - 1. <A[2] “05” >
 - 2. <U1 0 >
 - 6.L,2
 - 1. <A[2] “06” >
 - 2. <U1 0 >

7.L,2
1. <A[2] “07” >
2. <U1 0 >

8.L,2
1. <A[2] “08” >
2. <U1 1 >

.

24.L,2
1. <A[2] “24” >
2. <U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (RequestMappingCheck)

L,3

1. < U4 0 > //DATAID
2. < U4 185> //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
1. < A[16] “2010052712504500” > // Clock
2. < U1 1 > // PortID
3. L,24 // SlotList

1.L,2
1. <A[2] “01” >
2. <U1 1 >

2.L,2
1. <A[2] “02” >
2. <U1 1 >

3.L,2
1. <A[2] “03” >
2. <U1 1 >

4.L,2
1. <A[2] “04” >
2. <U1 0 >
5.L,2
1. <A[2] “05” >
2. <U1 0 >
6.L,2
1. <A[2] “06” >
2. <U1 0 >
7.L,2
1. <A[2] “07” >
2. <U1 0 >
8.L,2
1. <A[2] “08” >
2. <U1 0 >

.

24.L,2
1. <A[2] “24” >
2. <U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAPPINGCHECK)
L,4
1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[17] “REPLYMAPPINGCHECK” > // RCMD
4.L,2
1. L,2
1. < A[10] ”PORTID” >
2. < U1 1>
2. L,2
1. < A[6] ”RESULT” >

2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >

2. L,0

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID

2. < U4 141 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,3

1. < A[16] "2010052712504500" > // Clock

2. < U1 1 > // PortID

3. < A[3] "MPC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S1F3 H -> E Selected Equipment Status Request.

L,1

1.< U4 204 >

S1F4 H <- E Selected Equipment Status Data

L,24

1. L,2

1. < A[2] "01" >

2. <U1 0 >

2. L,2

1. < A[2] "02" >

2. <U1 0 >

3. L,2

1. < A[2] "03" >

2. <U1 0 >
 4. L,2
 1. < A[2] “04” >
 2. <U1 0 >
 5. L,2
 1. < A[2] “05” >
 2. <U1 0 >
 6. L,2
 1. < A[2] “06” >
 2. <U1 0 >
 7. L,2
 1. < A[2] “07” >
 2. <U1 0 >
 8. L,2
 1. < A[2] “08” >
 2. <U1 1 >

.
 .
 .
 24. L,2
 1. < A[2] “24” >
 2. <U1 0 >

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (TRANSFERMAGTOMAG)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (TRANSFERMAGTOMAG)

L,4

1. < U4 0 > //DATAID
 2. < A[0] “” > //OBJSPEC
 3. < A[16] ” TRANSFERMAGTOMAG” > // RCMD
 4.L,8
 1. L,2

1. < A[5] "LOTID" >
2. < A[20] "ABCDEFGHIJKLMNPQRST" >
2. L,2
 1. < A[9] "SRCPORTID" >
 2. < U1 1 >
3. L,2
 1. < A[10] "DESTPORTID" >
 2. < U1 1 >
4. L,2
 1. < A[3] "QTY" >
 2. < U4 3 >
5. L,2
 1. < A[5] "ORDER" >
 2. L,24
 1. < A[2] "08" >
 2. < A[0] " " >
 3. < A[0] " " >
 4. < A[0] " " >
 5. < A[0] " " >
 6. < A[0] " " >
 7. < A[0] " " >
 8. < A[0] " " >
 - .
 - .
 - .
 24. < A[0] " " >
6. L,2
 1. < A[9] "LOTPANELS" >
 2. L,3
 1. < A[15] "0000000000000001" >
 2. < A[15] "0000000000000011" >
 3. < A[15] "0000000000000111" >
 7. L,2
 1. < A[9] "SRCPANELS" >
 2. L,0
 8. L,2

1. < A[10] “DESTPANELS” >
2. L,0

S2F50 H <- E The host command Ack.
 L,2
 1. < B[1] 0 >
 2. L,0

The transportation of the panel started to the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagToMagStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagToMagStarted)
 L,3
 1. < U4 0 > //DATAID
 2. < U4 153> //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // LotID
 3. < U1 1 > // Source PortID
 4. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.
 <B[1] 0 >

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		

		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 121 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[0] "" > // PanelID
 - 4. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 120 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,6
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[15] "000000000000111" > // PanelID
 - 4. < A[5] "Front" > // Orientation
 - 5. < U1 0 > // ResultCode
 - 6. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Panel load to process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToTool)

L,3

1. < U4 0 > //DATAID
2. < U4 127> //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 3. < A[15] "000000000000111" > // PanelID
 4. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

A panel unloaded from the process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromTool)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromTool)

L,3

1. < U4 0 > //DATAID
2. < U4 126 > //CEID
3. L,1

1. L,2

1. < RPTID >

2. L,4

- 1. < A[16] “2010052712504500” > // Clock
- 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
- 3. < A[0] “” > // PanelID
- 4. < A[2] “00” > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 120 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,6
- 1. < A[16] “2010052712504500” > // Clock
- 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
- 3. < A[15] “000000000000111” > // PanelID
- 4. < A[5] “Front” > // Orientation
- 5. < U1 0 > // ResultCode
- 6. < A[2] “08” > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

A panel load to unloader port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 122 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,5
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 - 3. < A[15] "000000000000111" > // PanelID
 - 4. < A[2] "08" > // SlotID
 - 5. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

All panels were moved from loader port to unloader port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagToMagCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagToMagCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 133 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,5
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 - 3. < U1 1 > // Source PortID
 - 4. < U1 1 > // Dest PortID
 - 5. L,24 // PanelList
 - 1. L,⁴

```

1. < A[0] “” >                                // PanelID
2. < A[2] “01” >                            // SlotID
3. < U1 0 >                                // ResultCode
4. < A[4] “Back” >                         // Orientation

2. L,4
   1. < A[0] “” >
   2. < A[2] “02” >
   3. < U1 0 >
   4. < A[4] “Back” >

3. L,4
   1. < A[0] “” >
   2. < A[2] “03” >
   3. < U1 0 >
   4. < A[4] “Back” >

4. L,4
   1. < A[0] “” >
   2. < A[2] “04” >
   3. < U1 0 >
   4. < A[4] “Back” >

5. L,4
   1. < A[0] “” >
   2. < A[2] “05” >
   3. < U1 0 >
   4. < A[4] “Back” >

6. L,4
   1. < A[15] “” >
   2. < A[2] “06” >
   3. < U1 0 >
   4. < A[4] “Back” >

7. L,4
   1. < A[0] “” >
   2. < A[2] “07” >
   3. < U1 0 >
   4. < A[4] “Back” >

8. L,4
   1. < A[0] “000000000000111” >

```

2. < A[2] "08" >
3. < U1 0 >
4. < A[4] "Back" >

24. L,**4**

1. < A[0] "" >
2. < A[2] "24" >
3. < U1 0 >
4. < A[4] "Back" >

S6F12 H -> E The event report Ack.
<B[1] 0 >

AES stops the load port.				
Host	SxFx		SxFx	Equipment
The host command send (STOP)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (STOP)
L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[4] "STOP" > // RCMD
4. L,1
1. L,2
 1. < A[6] "PORTID" >
 2. < U1 0 >

S2F50 H <- E The host command Ack.
L,2

1. < B[1] 0 >
2. L,0

The load port undocks the magazine.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MOR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 141 > //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U1 1 > // PortID
 - 3. < A[3] "MOR" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

Operator unloads a magazine from the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MagazineUndocked)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (PortStatusChange=MIR)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (MagazineUndocked)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 182 > //CEID
- 3. L,1
 - 1. L,2

```

1. < RPTID >
2. L,4
  1. < A[16] "2010052712504500" >           // Clock
  2. < U1 1 >                                // PortID
  3. < A[6] "M00001" >                      // MagazineID
  4. < A[9] "123456789" >                   // OperatorID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (PortStatusChange)
L,3

```

1. < U4 0 >                  //DATAID
2. < U4 141 >                //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,3
      1. < A[16] "2010052712504500" >           // Clock
      2. < U1 1 >                                // PortID
      3. < A[3] "MIR" >                         // PortState

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4 Abnormally Scenario

9.4.1 Recovery (resume next) scenario of the ID read error.

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)
L,3

1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[4] "NULL" > // Orientation
 5. < U1 1 > // ResultCode
 6. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

The error occurred.				
Host	SxFx		SxFx	Equipment

		<-	S5F1	Alarm Report Send.
Alarm Report Acknowledge.	S5F2	->		
		<-	S6F11	The event report send (AlarmSet)
The event report Ack.	S6F12	->		

S5F1 H <- E Alarm Report Send.

L,3

- 1. < B[1] 128 > //ALCD
- 2. < U4 12345 > //ALID
- 3. < A[40] "Panel ID readout failure" > //ALTX

S5F2 H -> E Alarm Report Acknowledge.

<B[1] 0 >

S6F11 H <- E The event report send (AlarmSet)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 102> //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U2 12345 > // AlarmID
 - 3. L,2 // Alarm Set
 - 1.< U2 67890 >
 - 2.< U2 12345 >

S6F12 H -> E The event report Ack.

<B[1] 0 >

AES send the resume command (Next). Operator can't fix the panel.

Host	SxFx	SxFx	Equipment
The host command send. (RESUME)	S2F49	->	

		<-	S2F50	The host command Ack
--	--	----	-------	----------------------

S2F49 H -> E The host command send (RESUME)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] “” > //OBJSPEC
- 3. < A[6] ” RESUME” > // RCMD
- 4.L,1
 - 1. L,2
 - 1. < A[4] ”MODE” >
 - 2. <U1 1 >

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

The error is cleared.				
Host	SxFx		SxFx	Equipment
		<-	S5F1	Alarm Report Send.
Alarm Report Acknowledge.	S5F2	->		
		<-	S6F11	The event report send (AlarmClear)
The event report Ack.	S6F12	->		

S5F1 H <- E Alarm Report Send.

L,3

- 1. < B[1] 0 > //ALCD
- 2. < U4 12345 > //ALID
- 3. < A[40] “Panel ID readout failure” > //ALTX

S5F2 H -> E Alarm Report Acknowledge.

<B[1] 0 >

S6F11 H <- E The event report send (Alarm Clear)

L,3

```

1. < U4 0 >           //DATAID
2. < U4 101>          //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,3
      1. < A[16] "2010052712504500" >           // Clock
      2. < U2 12345 >                          // AlarmID
      3. L,1                                     // Alarm Set
        1.< U2 67890 >

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

The wrong panel load to loader port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)
L,3
 1. < U4 0 > //DATAID
 2. < U4 122 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,5
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "08" > // SlotID
 5. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Remove the next panel from the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "07" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 3. < A[15] "0000000000000001" > // PanelID

```

4. < A[4] "Front" >           // Orientation
5. < U1 0 >                 // ResultCode
6. < A[2] "07" >             // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.2 Recovery (resume retry) scenario of the ID read error.

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)

L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID

```

3. L,1
  1. L,2
    1. < RPTID >
    2. L,6
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" >   // LotID
      3. < A[0] "" >                            // PanelID
      4. < A[4] "NULL" >                         // Orientation
      5. < U1 1 >                             // ResultCode
      6. < A[2] "08" >                          // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

The error occurred.				
Host	SxFx		SxFx	Equipment
		<-	S5F1	Alarm Report Send.
Alarm Report Acknowledge.	S5F2	->		
		<-	S6F11	The event report send (AlarmSet)
The event report Ack.	S6F12	->		

S5F1 H <- E Alarm Report Send.
L,3
 1. < B[1] 128 > //ALCD
 2. < U4 12345 > //ALID
 3. < A[40] "Panel ID readout failure" > //ALTX

S5F2 H -> E Alarm Report Acknowledge.
<B[1] 0 >

S6F11 H <- E The event report send (AlarmSet)
L,3
 1. < U4 0 > //DATAID
 2. < U4 102> //CEID
 3. L,1
 1. L,2

```

1. < RPTID >
2. L,3
  1. < A[16] "2010052712504500" >           // Clock
  2. < U2 12345 >                          // AlarmID
  3. L,2                                     // Alarm Set
    1.< U2 67890 >
    2.< U2 12345 >

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

Operator fixed the panel.				
AES send the resume command (Retry).				
Host	SxFx		SxFx	Equipment
The host command send. (RESUME)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (RESUME)
L,4
 1. < U4 0 > //DATAID
 2. < A[0] "" > //OBJSPEC
 3. < A[6] "RESUME" > // RCMD
 4.L,1
 1. L,2
 1. < A[4] "MODE" >
 2. < U1 2 >

S2F50 H <- E The host command Ack.
L,2
 1. < B[1] 0 >
 2. L,0

The error is cleared.				
Host	SxFx		SxFx	Equipment
		<-	S5F1	Alarm Report Send.

Alarm Report Acknowledge.	S5F2	->		
		<-	S6F11	The event report send (AlarmClear)
The event report Ack.	S6F12	->		

S5F1 H <- E Alarm Report Send.

L,3

- 1. < B[1] 0 > //ALCD
- 2. < U4 12345 > //ALID
- 3. < A[40] "Panel ID readout failure" > //ALTX

S5F2 H -> E Alarm Report Acknowledge.

<B[1] 0 >

S6F11 H <- E The event report send (Alarm Clear)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 101> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < U2 12345 > // AlarmID
 - 3. L,1 // Alarm Set
 - 1.< U2 67890 >

S6F12 H -> E The event report Ack.

<B[1] 0 >

Read the panel ID.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (IDRead)

L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "00000000000011" > // PanelID
 4. < A[4] "Front" > // Orientation
 5. < U1 0 > // ResultCode
 6. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.3 Recovery (resume continue) scenario of the ID read error.

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID

3. < A[0] “” > // PanelID
 4. < A[2] “08” > // SlotID

S6F12 H -> E The event report Ack.
 <B[1] 0 >

S6F11 H <- E The event report send (IDRead)
 L,3

1. < U4 0 > //DATAID
 2. < U4 120 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
 3. < A[0] “” > // PanelID
 4. < A[4] “NULL” > // Orientation
 5. < U1 1 > // ResultCode
 6. < A[2] “08” > // SlotID

S6F12 H -> E The event report Ack.
 <B[1] 0 >

The error occurred.				
Host	SxFx		SxFx	Equipment
		<-	S5F1	Alarm Report Send.
Alarm Report Acknowledge.	S5F2	->		
		<-	S6F11	The event report send (AlarmSet)
The event report Ack.	S6F12	->		

S5F1 H <- E Alarm Report Send.
 L,3
 1. < B[1] 128 > //ALCD
 2. < U4 12345 > //ALID
 3. < A[40] “Panel ID readout failure” > //ALTX

S5F2 H -> E Alarm Report Acknowledge.
<B[1] 0 >

S6F11 H <- E The event report send (AlarmSet)
L,3

1. < U4 0 > //DATAID
2. < U4 102> //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,3
 1. < A[16] "2010052712504500" > // Clock
 2. < U2 12345 > // AlarmID
 3. L,2 // Alarm Set
 - 1.< U2 67890 >
 - 2.< U2 12345 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

AES send the resume command (Continue).				
Host	SxFx		SxFx	Equipment
The host command send. (RESUME)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (CONTINUE)
L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[6] "RESUME" > // RCMD
- 4.L,1
1. L,2
 1. < A[4] "MODE" >
 2. <U1 3 >

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

The error is cleared.				
Host	SxFx		SxFx	Equipment
		<-	S5F1	Alarm Report Send.
Alarm Report Acknowledge.	S5F2	->		
		<-	S6F11	The event report send (AlarmClear)
The event report Ack.	S6F12	->		

S5F1 H <- E Alarm Report Send.

L,3

1. < B[1] 0 > //ALCD
2. < U4 12345 > //ALID
3. < A[40] "Panel ID readout failure" > //ALTX

S5F2 H -> E Alarm Report Acknowledge.

<B[1] 0 >

S6F11 H <- E The event report send (Alarm Clear)

L,3

1. < U4 0 > //DATAID
2. < U4 101> //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] "2010052712504500" > // Clock
 2. < U2 12345 > // AlarmID
 3. L,1 // Alarm Set
 - 1.< U2 67890 >

S6F12 H -> E The event report Ack.
 <B[1] 0 >

Panel load to process tool.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToTool)
 L,3

1. < U4 0 > //DATAID
2. < U4 127> //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,4
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 3. < A[0] "" > // PanelID
 4. < A[2] "08" > // SlotID

S6F12 H -> E The event report Ack.
 <B[1] 0 >

9.4.4 When the slot that AES requested is already full. (For the Unloader scenario)

The shuttle delivers the panel to the empty slot from top to bottom.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)
 L,3

```

1. < U4 0 >           //DATAID
2. < U4 122 >          //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,5
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >          // LotID
      3. < A[15] "000000000000011" >                // PanelID
      4. < A[2] "03" >                            // SlotID
      5. < U1 1 >                           // Dest PortID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.5 When the slot that AES requested is already full. (For the transfer magazine to magazine scenario)

The panel is not transported to the destination magazine.				
The panel is returned to the source magazine (source slot).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)

L,3

```

1. < U4 0 >           //DATAID
2. < U4 122 >          //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,5
      1. < A[16] "2010052712504500" >           // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >          // LotID
      3. < A[15] "000000000000011" >                // PanelID
      4. < A[2] "03" >                            // SlotID

```

5. <U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.6 When start command to port is canceled.

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (LOADSTART)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (LOADSTART)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] “” > //OBJSPEC
- 3. < A[9] ” LOADSTART” > // RCMD
- 4.L,7
 - 1. L,2
 - 1. < A[5] ”LOTID” >
 - 2. < A[20] “ABCDEFGHIJKLMNPQRSTUVWXYZ” >
 - 2. L,2
 - 1. < A[9] ” SRCPORTID” >
 - 2. <U1 1 >
 - 3. L,2
 - 1. < A[10] ” DESTPORTID” >
 - 2. <U1 0 >
 - 4. L,2
 - 1. < A[3] ” QTY” >
 - 2. <U4 10 >
 - 5. L,2
 - 1. < A[5] ”ORDER” >
 - 2. L,24
 - 1. <A[2] “03” >
 - 2. <A[2] “02” >

3. <A[2] "01" >

4. <A[0] " " >

5. <A[0] " " >

6. <A[0] " " >

7. <A[0] " " >

8. <A[0] " " >

.

.

24. <A[0] " " >

6. L,2

1. < A[9] "LOTPANELS" >

2. L,10

1. <A[15] "0000000000000001" >

2. <A[15] "0000000000000011" >

3. <A[15] "0000000000000111" >

4. <A[15] "000000000011111" >

5. <A[15] "000000000111111" >

6. <A[15] "000000001111111" >

7. <A[15] "000000011111111" >

8. <A[15] "000000111111111" >

9. <A[15] "000001111111111" >

10. <A[15] "000011111111111" >

7. L,2

1. < A[9] "SRCPANELS" >

2. L,24

1. < A[15] "000001111111111" > // Slot1

2. < A[15] "000000011111111" > // Slot2

3. < A[15] "0000000000000011" > // Slot3

4. < A[0] " " > // Slot4

5. < A[0] " " > // Slot5

6. < A[0] " " > // Slot6

7. < A[0] " " > // Slot7

8. < A[0] " " > // Slot8

.

.

24. < A[0] “” > // Slot24

S2F50 H <- E The host command Ack.
L,2
1. < B[1] 0 >
2. L,0

The transportation of the panel started from the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadStarted)
L,3
1. < U4 0 > //DATAID
2. < U4 151> //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
1. < A[16] “2010052712504500” > // Clock
2. < A[20] “ABCDEFGHIJKLMNPQRSTUVWXYZ” > // LotID
3. < U1 1 > // Source PortID
4. < U1 0 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)

The event report Ack.	S6F12	->		
-----------------------	-------	----	--	--

S6F11 H <- E The event report send (UnloadedFromMag)
L,3
1. < U4 0 > //DATAID
2. < U4 121 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,4
1. < A[16] "2010052712504500" > // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
3. < A[0] "" > // PanelID
4. < A[2] "03" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3
1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
1. < A[16] "2010052712504500" > // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
3. < A[15] "0000000000000011" > // PanelID
4. < A[5] "Front" > // Orientation
5. < U1 0 > // ResultCode
6. < A[2] "03" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Panel load to process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToTool)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 127> //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[15] "0000000000000011" > // PanelID
 - 4. < A[2] "03" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

AES cancels the START commnd.				
Host	SxFx		SxFx	Equipment
The host command send (PORTCMDCANCEL)	S2F49	->		
		<-	S2F50	The host command Ack
		<-	S6F11	The event report send (PortCMDCancelled)
The event report Ack.	S6F12	->		

S2F49 H -> E The host command send (PORTCMDCANCEL)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[13] "PORTCMDCANCEL" > // RCMD

4.L,1

1. L,2

1. < A[6] "PORTID" >

2. < U1 1>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >

2. L,0

S6F11 H <- E The event report send (PortCMDCanceled)

L,3

1. < U4 0 > //DATAID

2. < U4 161> //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,3

1. < A[16] "2010052712504500" > // Clock

2. < U1 1 > // PortID

3. < A[3] "MPC" > // PortStatus

S6F12 H -> E The event report Ack.

<B[1] 0 >

The transportation of the panel to Tool stops.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadToToolCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadToToolCompleted)

L,3

1. < U4 0 > //DATAID

2. < U4 131 > //CEID

3. L,1

1. L,2
 1. < RPTID >
 2. L,5
 1. < A[16] “2010052712504500” > // Clock
 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
 3. < U1 1 > // Source PortID
 4. < U1 0 > // Dest PortID
 5. L,24 // PanelList
 1. L,**4**
 1. < A[0] “” > // Panel ID
 2. < A[2] “01” > // SlotID
 3. < U1 0 > // ResultCode
 4. < A[4] “Back” > // Orientation
 2. L,**4**
 1. < A[0] “” >
 2. < A[0] “02” >
 3. < U1 0 >
 4. < A[4] “Back” >
 3. L,**4**
 1. < A[15] “00000000000000011” >
 2. < A[0] “03” >
 3. < U1 0 >
 4. < A[4] “Back” >
 4. L,**4**
 1. < A[0] “” >
 2. < A[0] “04” >
 3. < U1 0 >
 4. < A[4] “Back” >
 5. L,**4**
 1. < A[0] “” >
 2. < A[0] “05” >
 3. < U1 0 >
 4. < A[4] “Back” >
 6. L,**4**
 1. < A[0] “” >
 2. < A[0] “06” >

3. < U1 0 >
4. < A[4] "Back" >
7. L,**4**
 1. < A[0] " " >
 2. < A[0] "07" >
 3. < U1 0 >
 4. < A[4] "Back" >
8. L,**4**
 1. < A[0] " " >
 2. < A[0] "08" >
 3. < U1 0 >
 4. < A[4] "Back" >

24. L,**4**
 1. < A[0] " " >
 2. < A[0] "24" >
 3. < U1 0 >
 4. < A[4] "Back" >

S6F12 H -> E The event report Ack.
<B[1] 0 >

The load port becomes possible to accept another START command.
The load port doesn't undock the magazine.

9.4.7 When start command to port is stoped.

The tool has been setup.				
Host	SxFx		SxFx	Equipment
The host command send (LOADSTART)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (LOADSTART)

L,4

1. < U4 0 > //DATAID
2. < A[0] ““ > //OBJSPEC
3. < A[9] ” LOADSTART” > // RCMD
4. L,7
 1. L,2
 1. < A[5] ”LOTID” >
 2. < A[20] “ABCDEFGHIJKLMNPQRST“ >
 2. L,2
 1. < A[9] ” SRCPORTID” >
 2. <U1 1 >
 3. L,2
 1. < A[10] ” DESTPORTID” >
 2. <U1 0 >
 4. L,2
 1. < A[3] ” QTY” >
 2. <U4 10 >
 5. L,2
 1. < A[5] ”ORDER” >
 2. L,24
 1. <A[2] “03” >
 2. <A[2] “02” >
 3. <A[2] “01” >
 4. <A[0] ““ >
 5. <A[0] ““ >
 6. <A[0] ““ >
 7. <A[0] ““ >
 8. <A[0] ““ >

.

.

.

24. <A[0] ““ >

6. L,2
 1. < A[9] ”LOTPANELS” >
 2. L,10
 1. <A[15] “0000000000000001” >

- 2. <A[15] "0000000000000011" >
- 3. <A[15] "000000000000111" >
- 4. <A[15] "000000000011111" >
- 5. <A[15] "000000000111111" >
- 6. <A[15] "000000001111111" >
- 7. <A[15] "000000011111111" >
- 8. <A[15] "000000111111111" >
- 9. <A[15] "000001111111111" >
- 10. <A[15] "000011111111111" >

- 7. L,2
 - 1. < A[9] "SRCPANELS" >
 - 2. L,24
 - 1. < A[15] "000011111111111" > // Slot1
 - 2. < A[15] "000000111111111" > // Slot2
 - 3. < A[15] "000000000000011" > // Slot3
 - 4. < A[0] "" > // Slot4
 - 5. < A[0] "" > // Slot5
 - 6. < A[0] "" > // Slot6
 - 7. < A[0] "" > // Slot7
 - 8. < A[0] "" > // Slot8

 - .
 - .
 - .
 - 24. < A[0] "" > // Slot24

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

The transportation of the panel started from the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadStarted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadStarted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 151> //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
- 1. < A[16] “2010052712504500” > // Clock
- 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
- 3. < U1 1 > // Source PortID
- 4. < U1 0 > // Dest PortID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Remove a panel from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 121 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
- 1. < A[16] “2010052712504500” > // Clock
- 2. < A[20] “ABCDEFGHIJKLMNPQRST” > // LotID
- 3. < A[0] “” > // PanelID
- 4. < A[2] “03” > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (IDRead)
L,3

1. < U4 0 > //DATAID
2. < U4 120 > //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,6
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "000000000000011" > // PanelID
 4. < A[5] "Front" > // Orientation
 5. < U1 0 > // ResultCode
 6. < A[2] "03" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

Panel load to process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToTool)
L,3

1. < U4 0 > //DATAID
2. < U4 127> //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,4

1. < A[16] "2010052712504500" > // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
3. < A[15] "000000000000011" > // PanelID
4. < A[2] "03" > // SlotID

S6F12 H -> E The event report Ack.
<B[1] 0 >

AES cancels the START commnd.				
Host	SxFx		SxFx	Equipment
The host command send (STOP)	S2F49	->		
		<-	S2F50	The host command Ack

S2F49 H -> E The host command send (STOP)

- L,4
1. < U4 0 > //DATAID
 2. < A[0] "" > //OBJSPEC
 3. < A[4] "STOP" > // RCMD
 4. L,1
 1. L,2
 1. < A[6] "PORTID" >
 2. < U1 1>

S2F50 H <- E The host command Ack.

- L,2
1. < B[1] 0 >
 2. L,0

The transportation of the panel to Tool stops.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadToToolCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadToToolCompleted)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 131 >         //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,5
      1. < A[16] "2010052712504500" >          // Clock
      2. < A[20] "ABCDEFGHIJKLMNPQRST" >        // LotID
      3. < U1 1 >                                // Source PortID
      4. < U1 0 >                                // Dest PortID
      5. L,24                                    // PanelList
        1. L,4
          1. < A[0] "" >                         // Panel ID
          2. < A[2] "01" >                        // SlotID
          3. < U1 0 >                            // ResultCode
          4. < A[4] "Back" >                    // Orientation
        2. L,4
          1. < A[0] "" >
          2. < A[0] "02" >
          3. < U1 0 >
          4. < A[4] "Back" >
        3. L,4
          1. < A[15] "0000000000000011" >
          2. < A[0] "03" >
          3. < U1 0 >
          4. < A[4] "Back" >
        4. L,4
          1. < A[0] "" >
          2. < A[0] "04" >
          3. < U1 0 >
          4. < A[4] "Back" >
        5. L,4
          1. < A[0] "" >
          2. < A[0] "05" >
          3. < U1 0 >
          4. < A[4] "Back" >

```

6. L,**4**

1. < A[0] “” >
2. < A[0] “06” >
3. < U1 0 >
- 4. < A[4] “Back” >**

7. L,**4**

1. < A[0] “” >
2. < A[0] “07” >
3. < U1 0 >
- 4. < A[4] “Back” >**

8. L,**4**

1. < A[0] “” >
2. < A[0] “08” >
3. < U1 0 >
- 4. < A[4] “Back” >**

.

.

24. L,**4**

1. < A[0] “” >
2. < A[0] “24” >
3. < U1 0 >
- 4. < A[4] “Back” >**

S6F12 H -> E The event report Ack.

<B[1] 0 >

The load port undocks the magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MOR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID
2. < U4 141 > //CEID

```

3. L,1
  1. L,2
    1. < RPTID >
    2. L,3
      1. < A[16] "2010052712474500" >           // Clock
      2. < U1 1 >                                // PortID
      3. < A[3] "MOR" >                          // PortState

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.8 When the result of REPLYMAGAZINEDOCK command is negative acknowledge

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (portstatuschange=MIR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)
L,3
 1. < U4 0 > //DATAID
 2. < U4 141 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] "2010052712474500" > // Clock
 2. < U1 1 > // PortID
 3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

Operater reads the Magazine ID by barcode reader.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)
The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestMagazineDock)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 180 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,2
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[6] "M00001" > // MagazineID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD
- 4.L,2
 - 1. L,2
 - 1. < A[10] "MAGAZINEID" >
 - 2. < A[6] "M00001" >
 - 2. L,2
 - 1. < A[6] "RESULT" >
 - 2. < U1 1>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

Tool HMI will indicate a message prompting the operator to check where to dock.

Even when the cart is docked, the port status lamp flashes in red and the tool will not start running.

9.4.9 When the result of REPLYOPERATORIDCHECK command is negative acknowledge

Operator reads the Operator ID by barcode reader.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorIdCheck)

L,3

1. < U4 0 > //DATAID
2. < U4 183 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,2
 1. < A[16] "2010052712504500" > // Clock
 2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)

L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[20] "REPLYOPERATORIDCHECK" > // RCMD
4. L,2

1. L,2
 1. < A[10] "OPERATORID" >
 2. < A[9] "123456789" >
2. L,2
 1. < A[6] "RESULT" >
 2. < U1 1>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

Tool HMI indicates "Failed in operator ID check".

9.4.10 ID read scenario of the enabled Reply ID read mode (Loader).

Remove a stack from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromMag)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 121 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[0] "" > // PanelID
 - 4. < A[2] "01" > // SlotID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Remove a stack from the load port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		
The host command send (REPLYIDREAD)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (IDRead)

L,3

- 1. < U4 0 > //DATAID

```

2. < U4 120 >           //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
1. < A[16] "2010052712504500" >      // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" >    // LotID
3. < A[15] "1111111111" >              // PanelID
4. < A[5] "Front" >                   // Orientation
5. < U1 0 >                         // ResultCode
6. < A[2] "01" >                     // SlotID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYIDREAD)
L,4
 1. < U4 0 > //DATAID
 2. < A[0] "" > //OBJSPEC
 3. < A[6] "REPLYIDREAD" > // RCMD
 4.L,1
 1. L,2
 1. < A[4] "RESULTCODE" >
 2. < U1 0 >

S2F50 H <- E The host command Ack.
L,2
 1. < B[1] 0 >
 2. L,0

Panel load to process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToTool)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 127> //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. < A[10] "1111111111" > // PanelID
 - 4. < A[2] "01" > // TrayID

S6F12 H -> E The event report Ack.

<B[1] 0 >

All panels have been loaded to tool (Only once).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadToToolCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadToToolCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 131 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,5
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 - 3. <U1 1 > // Source PortID
 - 4. <U1 0 > // Dest PortID
 - 5. L,96 // PanelList
 - 1. L,**4**

```

1. < A[10] "1111111111" >           // Panel ID
2. < A[2] "01" >                     // TrayID
3. < U1 0 >                         // ResultCode
4. < A[4] "Back" >                  // Orientation

2. L,4
   1. < A[10] "0111111111" >
   2. < A[2] "02" >
   3. < U1 0 >
   4. < A[4] "Back" >

3. L,4
   1. < A[10] "0000000011" >
   2. < A[2] "03" >
   3. < U1 0 >
   4. < A[4] "Back" >

4. L,4
   1. < A[0] "" >
   2. < A[0] "04" >
   3. < U1 0 >
   4. < A[4] "Back" >

5. L,4
   1. < A[0] "" >
   2. < A[0] "05" >
   3. < U1 0 >
   4. < A[4] "Back" >

6. L,4
   1. < A[0] "" >
   2. < A[0] "06" >
   3. < U1 0 >
   4. < A[4] "Back" >

7. L,4
   1. < A[0] "" >
   2. < A[0] "07" >
   3. < U1 0 >
   4. < A[4] "Back" >

8. L,4
   1. < A[0] "" >

```

2. < A[0] “08” >
3. < U1 0 >
4. < A[4] “Back” >

96. L,**4**

1. < A[0] “” >
2. < A[0] “96” >
3. < U1 0 >
4. < A[4] “Back” >

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.11 ID read scenario of the enabled Reply ID read mode (Unloader).

A panel unloaded from the process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadedFromTool)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadedFromTool)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 126 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,4
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[20] "ABCDEFGHIJKLMNPQRSTUVWXYZ" > // LotID
 - 3. < A[0] "" > // PanelID
 - 4. < A[2] "00" > // TrayID

S6F12 H -> E The event report Ack.

<B[1] 0 >

A panel unloaded from the process tool (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (IDRead)
The event report Ack.	S6F12	->		
The host command send (REPLYIDREAD)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (IDRead)

L,3

- 1. < U4 0 > //DATAID

```

2. < U4 120 >           //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,6
1. < A[16] "2010052712504500" >      // Clock
2. < A[20] "ABCDEFGHIJKLMNPQRST" >    // LotID
3. < A[10] "0000000011" >                // PanelID
4. < A[5] "Front" >                     // Orientation
5. < U1 0 >                            // ResultCode
6. < A[2] "00" >                         // TrayID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYIDREAD)
L,4
 1. < U4 0 > //DATAID
 2. < A[0] "" > //OBJSPEC
 3. < A[6] "REPLYIDREAD" > // RCMD
 4. L,1
 1. L,2
 1. < A[4] "RESULTCODE" >
 2. < U1 0 >

S2F50 H <- E The host command Ack.
L,2
 1. < B[1] 0 >
 2. L,0

A panel load to unloader port (several times as needed).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (LoadedToMag)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (LoadedToMag)
L,3

1. < U4 0 > //DATAID
2. < U4 122 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,5
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < A[15] "0000000011" > // PanelID
 4. < A[2] "03" > // SlotID
 5. < U1 1 > // Dest PortID

S6F12 H -> E The event report Ack.
<B[1] 0 >

A last panel unloaded from the process tool (Only once).				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (UnloadFromToolCompleted)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (UnloadFromToolCompleted)
L,3

1. < U4 0 > //DATAID
2. < U4 132 > //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,5
 1. < A[16] "2010052712504500" > // Clock
 2. < A[20] "ABCDEFGHIJKLMNPQRST" > // LotID
 3. < U1 0 > // Source PortID
 4. < U1 1 > // Dest PortID
 5. L,96 // PanelList

1. L,3
 1. < A[10] “1111111111” > // PanelID
 2. < A[2] “01” > // TrayID
 3. < U1 0 > // ResultCode
2. L,3
 1. < A[10] “0000001111” >
 2. < A[2] “02” >
 3. < U1 0 >
3. L,3
 1. < A[10] “0000000011” >
 2. < A[2] “03” >
 3. < U1 0 >
4. L,3
 1. < A[0] “” >
 2. < A[0] “04” >
 3. < U1 0 >
5. L,3
 1. < A[0] “” >
 2. < A[0] “05” >
 3. < U1 0 >
6. L,3
 1. < A[0] “” >
 2. < A[0] “06” >
 3. < U1 0 >
7. L,3
 1. < A[0] “” >
 2. < A[0] “07” >
 3. < U1 0 >
8. L,3
 1. < A[0] “” >
 2. < A[0] “08” >
 3. < U1 0 >
- .
- .
- .
96. L,3

1. < A[0] “” >
2. < A[0] “96” >
3. < U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.4.12 When the result of REPLYMAPPINGCHECK command is Negative Acknowledge.

AES specifies the process program for the load port.				
Host	SxFx		SxFx	Equipment
The host command send (PP-SELECT)	S2F49	->		
		<-	S2F50	The host command Ack.
		<-	S6F11	The event report send (PP-Selected)
The event report Ack	S6F12	->		

S2F49 H -> E The host command send (PP-SELECT)
L,4

1. < U4 0 > //DATAID
2. < A[0] “” > //OBJSPEC
3. < A[9] ”PP-SELECT” > // RCMD
- 4.L,1
 1. L,2
 1. < A[4] ”PPID” >
 2. < A[25] “ABCDEFGHIJKLM NOPQRSTUVWXYZ” >

S2F50 H <- E The host command Ack.
L,2

1. < B[1] 0 >
2. L,0

S6F11 H <- E The event report send (PP-Selected)
L,3

```

1. < U4 0 >           //DATAID
2. < U4 128 >          //CEID
3. L,1
  1. L,2
    1. < RPTID >
    2. L,2
      1. < A[16] "2010052712474500" >           // Clock
      2. < A[25] "ABCDEFGHIJKLMNPQRSTUVWXYZ" >     // PPID

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

Available condition to load a magazine.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (portstatuschange=MIR)
The event report Ack	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)
L,3
 1. < U4 0 > //DATAID
 2. < U4 141 > //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,3
 1. < A[16] "2010052712474500" > // Clock
 2. < U1 1 > // PortID
 3. < A[3] "MIR" > // PortState

S6F12 H -> E The event report Ack.
<B[1] 0 >

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment

		<-	S6F11	The event report send (RequestOperatorIdCheck)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorIdCheck)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 183 > //CEID
- 3. L,1
- 1. L,2
- 1. < RPTID >
- 2. L,2
- 1. < A[16] "2010052712504500" > // Clock
- 2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORIDCHECK)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[20] "REPLYOPERATORIDCHECK" > // RCMD
- 4.L,2
- 1. L,2
 - 1. < A[10] "OPERATORID" >
 - 2. < A[9] "123456789" >
- 2. L,2
 - 1. < A[6] "RESULT" >
 - 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

- 1. < B[1] 0 >
- 2. L,0

Operator reads the Magazine ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestMagazineDock)
The event report Ack.	S6F12	->		
The host command send (REPLYMAGAZINEDOCK)	S2F49	->		
		<-	S2F50	The host command Ack.

S6F11 H <- E The event report send (RequestMagazineDock)

L,3

1. < U4 0 > //DATAID
2. < U4 180 > //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,2
 1. < A[16] "2010052712504500" > // Clock
 2. < A[6] "M00001" > // MagazineID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAGAZINEDOCK)

L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OJJSPEC
3. < A[17] "REPLYMAGAZINEDOCK" > // RCMD
- 4.L,2
 1. L,2
 1. < A[10] "MAGAZINEID" >
 2. < A[6] "M00001" >
 2. L,2
 1. < A[6] "RESULT" >
 2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >

2. L,0

Operator loads a magazine to the load port.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (PortStatusChange=MIC)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (MagazineDocked)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (PortStatusChange)

L,3

1. < U4 0 > //DATAID

2. < U4 141 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,3

1. < A[16] "2010052712504500" > // Clock

2. < U1 1 > // PortID

3. < A[3] "MIC" > // PortState

S6F12 H -> E The event report Ack.

<B[1] 0 >

S6F11 H <- E The event report send (MagazineDocked)

L,3

1. < U4 0 > //DATAID

2. < U4 181 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,4

- 1. < A[16] “2010052712504500” > // Clock
- 2. < U1 1 > // PortID
- 3. < A[6] “M00001” > // MagazineID
- 4. < A[9] “123456789” > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

Loader automatically checks the presence of panels.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (MappingCompleted)
The event report Ack.	S6F12	->		
		<-	S6F11	The event report send (RequestMappingCheck)
The event report Ack.	S6F12	->		
The host command send (REPLYMAPPINGCHECK)	S2F49	->		
		<-	S2F50	The host command Ack
		<-	S6F11	The event report send (PortStatusChange=MPC)
The event report Ack.	S6F12	->		
Selected Equipment Status Request	S1F3	->		
		<-	S1F4	Selected Equipment Status Data

S6F11 H <- E The event report send (MappingCompleted)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 136> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,3
 - 1. < A[16] “2010052712504500” > // Clock

```

2. < U1 1 >           // PortID
3. L,24                // SlotList
1.L,2
1. <A[2] "01" >
2. <U1 1 >
2.L,2
1. <A[2] "02" >
2. <U1 1 >
3.L,2
1. <A[2] "03" >
2. <U1 1 >
4.L,2
1. <A[2] "04" >
2. <U1 0 >
5.L,2
1. <A[2] "05" >
2. <U1 0 >
6.L,2
1. <A[2] "06" >
2. <U1 0 >
7.L,2
1. <A[2] "07" >
2. <U1 0 >
8.L,2
1. <A[2] "08" >
2. <U1 0 >
.
.
.
24.L,2
1. <A[2] "24" >
2. <U1 0 >

```

S6F12 H -> E The event report Ack.
<B[1] 0 >

S6F11 H <- E The event report send (RequestMappingCheck)

L,3

1. < U4 0 > //DATAID

2. < U4 185> //CEID

3. L,1

 1. L,2

 1. < RPTID >

 2. L,3

 1. < A[16] “2010052712504500” > // Clock

 2. < U1 1 > // PortID

 3. L,24 // SlotList

 1.L,2

 1. <A[2] “01” >

 2. <U1 1 >

 2.L,2

 1. <A[2] “02” >

 2. <U1 1 >

 3.L,2

 1. <A[2] “03” >

 2. <U1 1 >

 4.L,2

 1. <A[2] “04” >

 2. <U1 0 >

 5.L,2

 1. <A[2] “05” >

 2. <U1 0 >

 6.L,2

 1. <A[2] “06” >

 2. <U1 0 >

 7.L,2

 1. <A[2] “07” >

 2. <U1 0 >

 8.L,2

 1. <A[2] “08” >

 2. <U1 0 >

.

24.L,2

1. <A[2] "24" >
2. <U1 0 >

S6F12 H -> E The event report Ack.
<B[1] 0 >

S2F49 H -> E The host command send (REPLYMAPPINGCHECK)
L,4

1. < U4 0 > //DATAID
2. < A[0] "" > //OBJSPEC
3. < A[17] "REPLYMAPPINGCHECK" > // RCMD
- 4.L,2
1. L,2
 1. < A[10] "PORTID" >
 2. < U1 1>
2. L,2
 1. < A[6] "RESULT" >
 2. < U1 0>

S2F50 H <- E The host command Ack.
L,2
1. < B[1] 0 >
2. L,0

Tool HMI will indicate OK button and a message of mapping mismatch.

When operator pushed OK button, Magazine is undock to Tool.

9.5 Popup Message Scenario

This chapter describes the scenarios of displaying messages in S10F3 and S10F5 commands.

There are the following limitations when displaying the messages on the touch panel.

- TID shall be “1”.
- The number of message lines that can be displayed at one time shall be up to three lines.
- The number of characters in the message to be displayed in one line shall be up to 32 characters.
Even if it exceeds 32 characters, it only displays 1-32 characters.

9.5.1 Message display scenario of a single line using S10F3.S10F3

The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send “Single line Test!”	S10F3	->		
		<-	S10F4	The message Ack.

S10F3 H -> E The message send

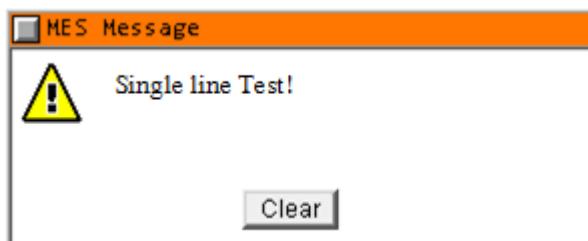
L,2

1. < B[1] 1 > //TID
2. < A[17] “Single line Test!” > //TEXT

S10F4 H <- E The message Ack.

<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.

Host	SxFx		SxFx	Equipment

		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 14> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,1
 - 1. < A[16] "2015022012504500" > // Clock

S6F12 H -> E The event report Ack.

<B[1] 0 >

9.5.2 Message display scenario of multiline using S10F3.S10F3

The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send "Multi line Test: 01 Multi line Test: 02 Multi line Test: 03"	S10F3	->		
		<-	S10F4	The message Ack.

S10F3 H -> E The message send

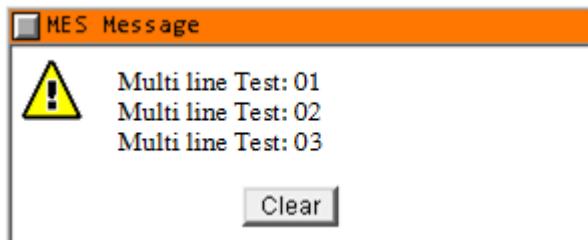
L,2

- 1. < B[1] 1 > //TID
- 2. < A[61] "Multi line Test: 01[CR][LF]Multi line Test: 02[CR][LF]Multi line Test: 03" >
//TEXT

S10F4 H <- E The message Ack.

<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

L,3

1. < U4 0 > //DATAID
2. < U4 14> //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,1
 1. < A[16] “2015022012504500” > // Clock

S6F12 H -> E The event report Ack.

<B[1] 0 >

9.5.3 Message display scenario of a single line using S10F5

The message is sent from the host.

Host	SxFx		SxFx	Equipment
The message send “Single line Test!”	S10F5	->		
		<-	S10F6	The message Ack.

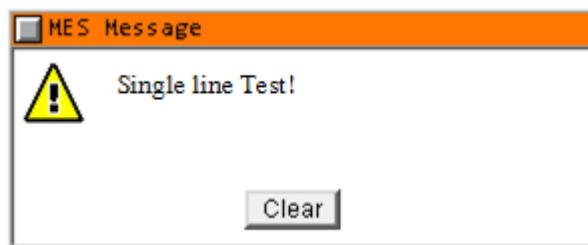
S10F5 H -> E The message send

L,2

1. < B[1] 1 > //TID
2. L,1
< A[17] "Single line Test!" > //TEXT

S10F6 H <- E The message Ack.
<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

L,3

1. < U4 0 > //DATAID
2. < U4 14> //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,1
 1. < A[16] "2015022012504500" > // Clock

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.5.4 Message display scenario of multiline using S10F5

The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send “Multi line Test: 01” “Multi line Test: 02” “Multi line Test: 03”	S10F5	->		
		<-	S10F6	The message Ack.

S10F5 H -> E The message send

L,2

1. < B[1] 1 > //TID
2. L,3

< A[19] “Multi line Test: 01” > //TEXT

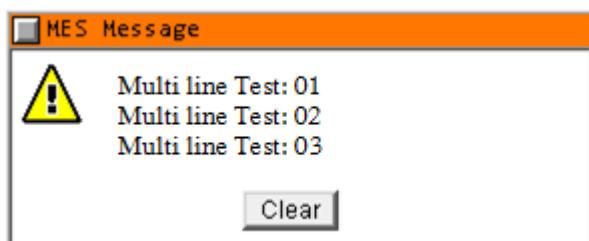
< A[19] “Multi line Test: 02” > //TEXT

< A[19] “Multi line Test: 03” > //TEXT

S10F6 H <- E The message Ack.

<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

```
L,3
1. < U4 0 >           //DATAID
2. < U4 14>          //CEID
3. L,1
1. L,2
1. < RPTID >
2. L,1
1. < A[16] "2015022012504500" >           // Clock
```

S6F12 H -> E The event report Ack.
<B[1] 0 >

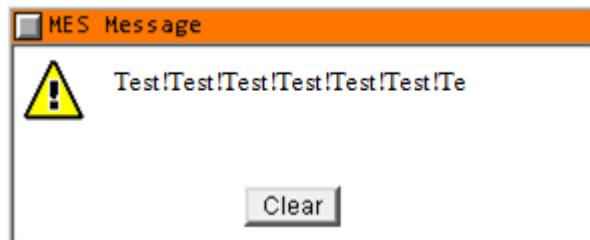
9.5.5 Message display scenario of characters beyond the limit using S10F3

The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send "Test!Test!Test!Test!Test!Test! Test!Test!Test!Test!Test!"	S10F3	->		
		<-	S10F4	The message Ack.

S10F3 H -> E The message send
L,2
1. < B[1] 1 > //TID
2. < A[60] "Test!Test!Test!Test!Test!Test!Test!Test!Test!" > //TEXT

S10F6 H <- E The message Ack.
<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

L,3

1. < U4 0 > //DATAID
2. < U4 14> //CEID
3. L,1
 1. L,2
 1. < RPTID >
 2. L,1
 1. < A[16] “2015022012504500” > // Clock

S6F12 H -> E The event report Ack.

<B[1] 0 >

9.5.6 Message display scenario of characters beyond the limit using S10F5

The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send “Multi line Test: 01” “Multi line Test: 02” “Multi line Test: 03” “Multi line Test: 04” “Multi line Test: 05”	S10F5	->		
		<-	S10F6	The message Ack.

S10F5 H -> E The message send

L,2

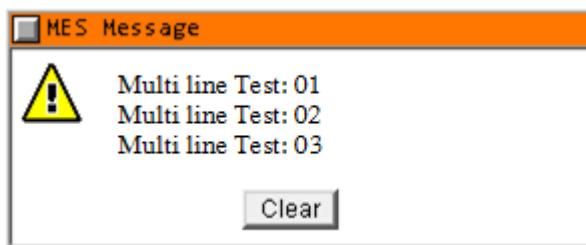
1. < B[1] 1 > //TID
2. L,5

< A[19] “Multi line Test: 01” > //TEXT

< A[19] "Multi line Test: 02" > //TEXT
 < A[19] "Multi line Test: 03" > //TEXT
 < A[19] "Multi line Test: 04" > //TEXT
 < A[19] "Multi line Test: 05" > //TEXT

S10F6 H <- E The message Ack.
 <B[1] 0 >

● Display Message



Operator acknowledges the message on the equipment terminal and press Clear.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)
 L,3

1. < U4 0 > //DATAID
2. < U4 14> //CEID
3. L,1
1. L,2
 1. < RPTID >
 2. L,1
 1. < A[16] "2015022012504500" > // Clock

S6F12 H -> E The event report Ack.
 <B[1] 0 >

9.5.7 Message display scenario when continuously receiving a plurality of messages

The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send “1st Message.”	S10F3	->		
		<-	S10F4	The message Ack.

S10F3 H -> E The message send

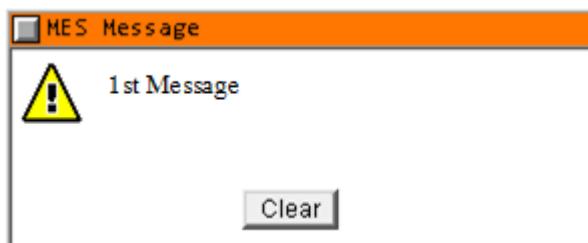
L,2

- 1. < B[1] 1 > //TID
- 2. < A[12] “1st Message.” > //TEXT

S10F4 H <- E The message Ack.

<B[1] 0 >

- Display Message



The message is sent from the host.				
Host	SxFx		SxFx	Equipment
The message send “2nd Message.”	S10F3	->		
		<-	S10F4	The message Ack.

S10F3 H -> E The message send

L,2

- 1. < B[1] 1 > //TID
- 2. < A[12] “2nd Message.” > //TEXT

S10F4 H <- E The message Ack.

<B[1] 0 >

- Display Message



The message is sent from the host.

Host	SxFx		SxFx	Equipment
The message send “3rd Message.”	S10F3	->		
		<-	S10F4	The message Ack.

S10F3 H -> E The message send

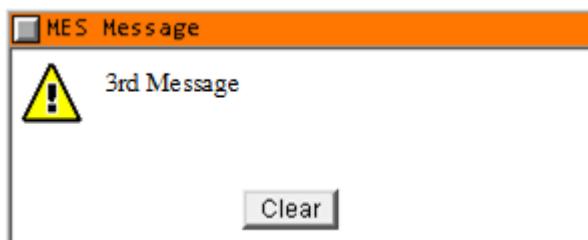
L,2

1. < B[1] 1 > //TID
2. < A[12] “3rd Message.” > //TEXT

S10F4 H <- E The message Ack.

<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.

Host	SxFx		SxFx	Equipment

		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

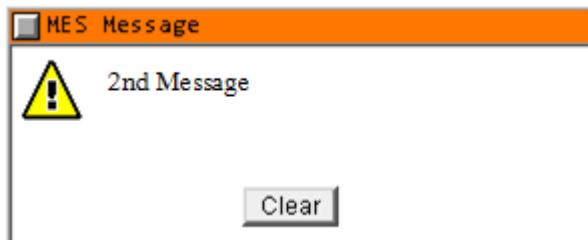
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 14> //CEID
- 3. L,1
 - 1. L,2
 - 1. < RPTID >
 - 2. L,1
 - 1. < A[16] "2015022012504500" > // Clock

S6F12 H -> E The event report Ack.

<B[1] 0 >

● Display Message



Operator acknowledges the message on the equipment terminal and press Clear.

Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (GemMsgRecognition)

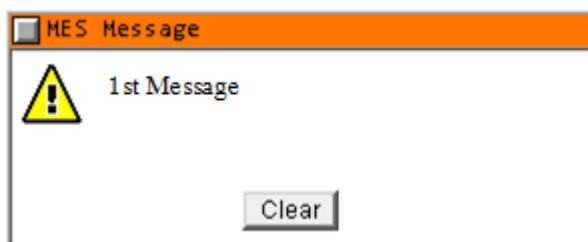
L,3

- 1. < U4 0 > //DATAID
- 2. < U4 14> //CEID

3. L,1
 1. L,2
 1. < RPTID >
 2. L,1
 1. < A[16] "2015022012504500" > // Clock

S6F12 H -> E The event report Ack.
<B[1] 0 >

- Display Message



Operator acknowledges the message on the equipment terminal and press Clear.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (GemMsgRecognition)
The event report Ack.	S6F12	->		

- S6F11 H <- E The event report send (GemMsgRecognition)
L,3
1. < U4 0 > //DATAID
 2. < U4 14> //CEID
 3. L,1
 1. L,2
 1. < RPTID >
 2. L,1
 1. < A[16] "2015022012504500" > // Clock

S6F12 H -> E The event report Ack.
<B[1] 0 >

9.6 Operator Login Scenario

9.6.1 Operator Login Basic Scenario

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorLogin)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorLogin)

L,3

- 1. < U4 0 > //DATAID
- 2. < U4 184 > //CEID
- 3. L,1
- 1. L,2
 - 1. < RPTID >
 - 2. L,2
 - 1. < A[16] "2010052712504500" > // Clock
 - 2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORLOGIN)

L,4

- 1. < U4 0 > //DATAID
- 2. < A[0] "" > //OBJSPEC
- 3. < A[20] "REPLYOPERATORLOGIN" > // RCMD
- 4.L,2
 - 1. L,2
 - 1. < A[10] "OPERATORID" >
 - 2. < A[9] "123456789" >
 - 2. L,2
 - 1. < A[6] "RESULT" >

2. < U1 0>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >

2. L,0

9.6.2 When the result of REPLYOPERATORLOGIN command is negative acknowledge

Operater reads the Operator ID by barcode reader.				
Host	SxFx		SxFx	Equipment
		<-	S6F11	The event report send (RequestOperatorLogin)
The event report Ack.	S6F12	->		

S6F11 H <- E The event report send (RequestOperatorLogin)

L,3

1. < U4 0 > //DATAID

2. < U4 184 > //CEID

3. L,1

1. L,2

1. < RPTID >

2. L,2

1. < A[16] "2010052712504500" > // Clock

2. < A[9] "123456789" > // OperatorID

S6F12 H -> E The event report Ack.

<B[1] 0 >

S2F49 H -> E The host command send (REPLYOPERATORLOGIN)

L,4

1. < U4 0 > //DATAID

2. < A[0] "" > //OJJSPEC

3. < A[20] "REPLYOPERATORLOGIN" > // RCMD

4.L,2

1. L,2

1. < A[10] "OPERATORID" >
 2. < A[9] "123456789" >
2. L,2
1. < A[6] "RESULT" >
 2. < U1 1>

S2F50 H <- E The host command Ack.

L,2

1. < B[1] 0 >
2. L,0

Tool HMI indicates "Failed in operator ID check".

10 Appendix

10.1 Communication Specification

No..	Item	Setting Value
1	Remote IP address	
2	Local port No.	5000
3	Remote port No.	5000
4	HSMS connection mode	<input type="checkbox"/> Active Mode <input checked="" type="checkbox"/> Passive Mode <input type="checkbox"/> Alternating Mode
5	Session ID (Device ID)	0
6	Source ID	<input type="checkbox"/> Unused <input checked="" type="checkbox"/> Fixed value (=0) <input type="checkbox"/> Increment method
7	Transaction ID	<input type="checkbox"/> Fixed value <input checked="" type="checkbox"/> Increment method
8	T3 time out	30 seconds
9	T5 time out	5 seconds
10	T6 time out	10 seconds
11	T7 time out	5 seconds
12	T8 time out	6 seconds
13	HSMS reject procedure	<input type="checkbox"/> Do not make a Reject req. <input checked="" type="checkbox"/> Make a Reject req.
14	Link test timer value	60 seconds
15	Number of open transaction on sender side	1
16	Number of open transaction on receiver side	10
17	Interleaving on sender side	<input checked="" type="checkbox"/> Do not interleave <input type="checkbox"/> Interleave
18	Interleaving on receiver side	<input type="checkbox"/> Interleaving not allowed <input checked="" type="checkbox"/> Interleaving allowed
19	Duplicated message check	<input type="checkbox"/> Do not abandon the message <input checked="" type="checkbox"/> Abandon the message
20	Maximum length of a receiving message	256000 bytes
21	Communication state at the system startup	<input type="checkbox"/> Disable the communication <input checked="" type="checkbox"/> Enable the communication

No..	Item	Setting Value
22	Control state at the system start up.	<input checked="" type="checkbox"/> OFF-LINE <input type="checkbox"/> ON-LINE
23	Substate when the control state at the system startup is offline.	<input checked="" type="checkbox"/> EQUIPMENT OFF-LINE <input type="checkbox"/> ATTEMPT ON-LINE <input type="checkbox"/> HOST OFF-LINE
24	Substate when the control state at the system startup is online.	<input checked="" type="checkbox"/> LOCAL <input type="checkbox"/> REMOTE
25	Control state when failed to set to online.	<input checked="" type="checkbox"/> EQUIPMENT OFF-LINE <input type="checkbox"/> HOST OFF-LINE
26	Contents to set to the data item “DATAID”.	<input checked="" type="checkbox"/> Continuous value <input type="checkbox"/> Fixed value <input type="checkbox"/> Individual value per event
27	Maximum text size able to display in the equipment’s terminal service.	512byte
28	Method to process an error occurs when exceeds the maximum text size able to display in the equipment’s terminal service.	<input type="checkbox"/> Send S9F7 <input checked="" type="checkbox"/> Send S9F11 <input type="checkbox"/> Receive only receivable portion and reply as good. <input type="checkbox"/> Reply as error.
29	Multi block by equipment’s terminal service.	<input type="checkbox"/> Not supported (Reply S10F7) <input checked="" type="checkbox"/> Supported

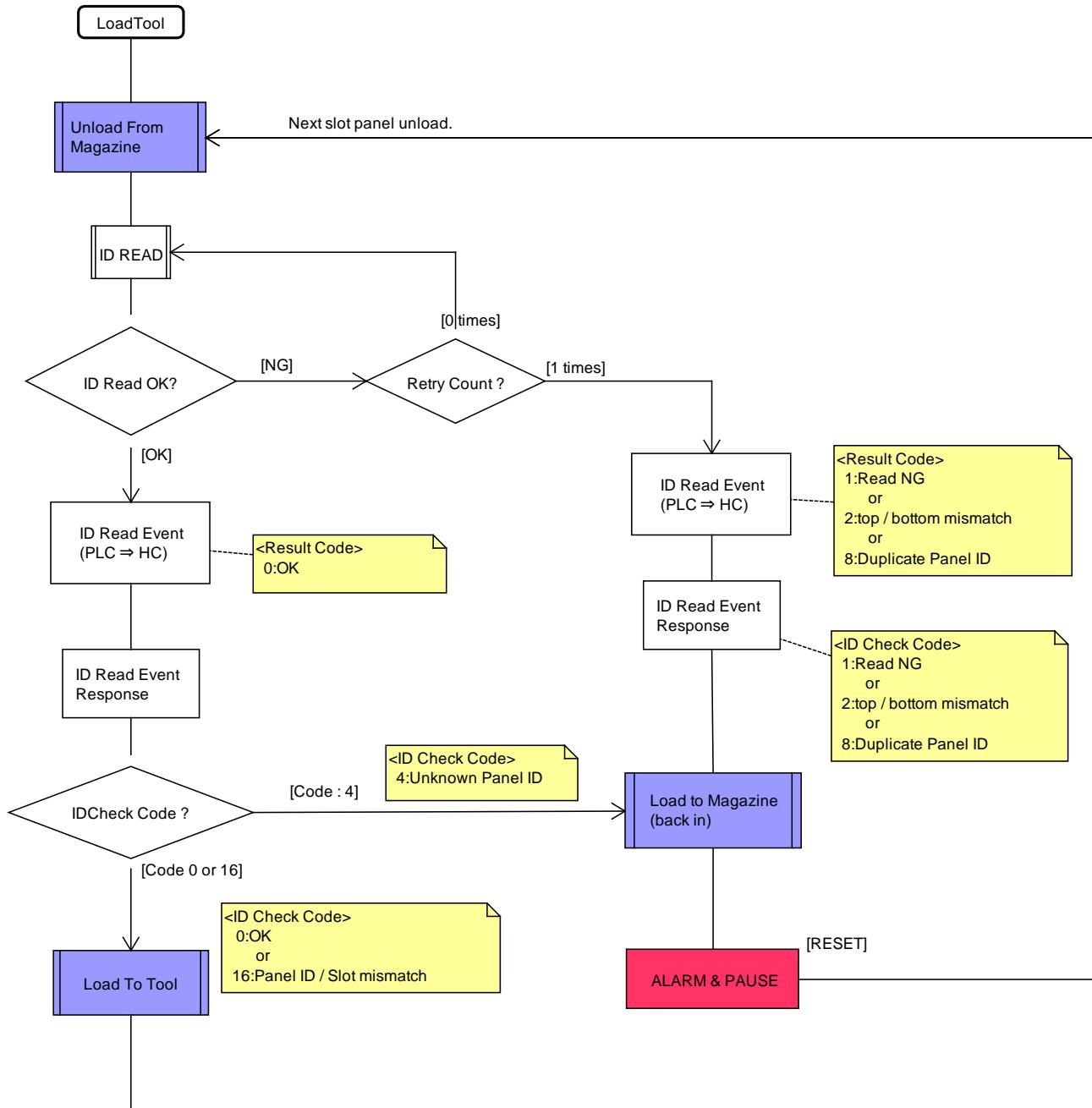
10.2 Recipe data definitions

Name	XML Tag	Type	Acceptable Character Range	Note
Recipe Name	RecipeName	String	1 to 25 characters	Recipe name
Rotate 180	Rotate180	Boolean	1 character	Y or N
Orientation	Orientation	String	3 to 25 characters	Front or Back or Null
Flip	Flip	Boolean	1 character	Y or N This item is ignored excluding Flip Unit Line.
Panel Rotate	PanelRotate	Boolean	1 character	Y or N This item is ignored excluding ABF peeler Line.

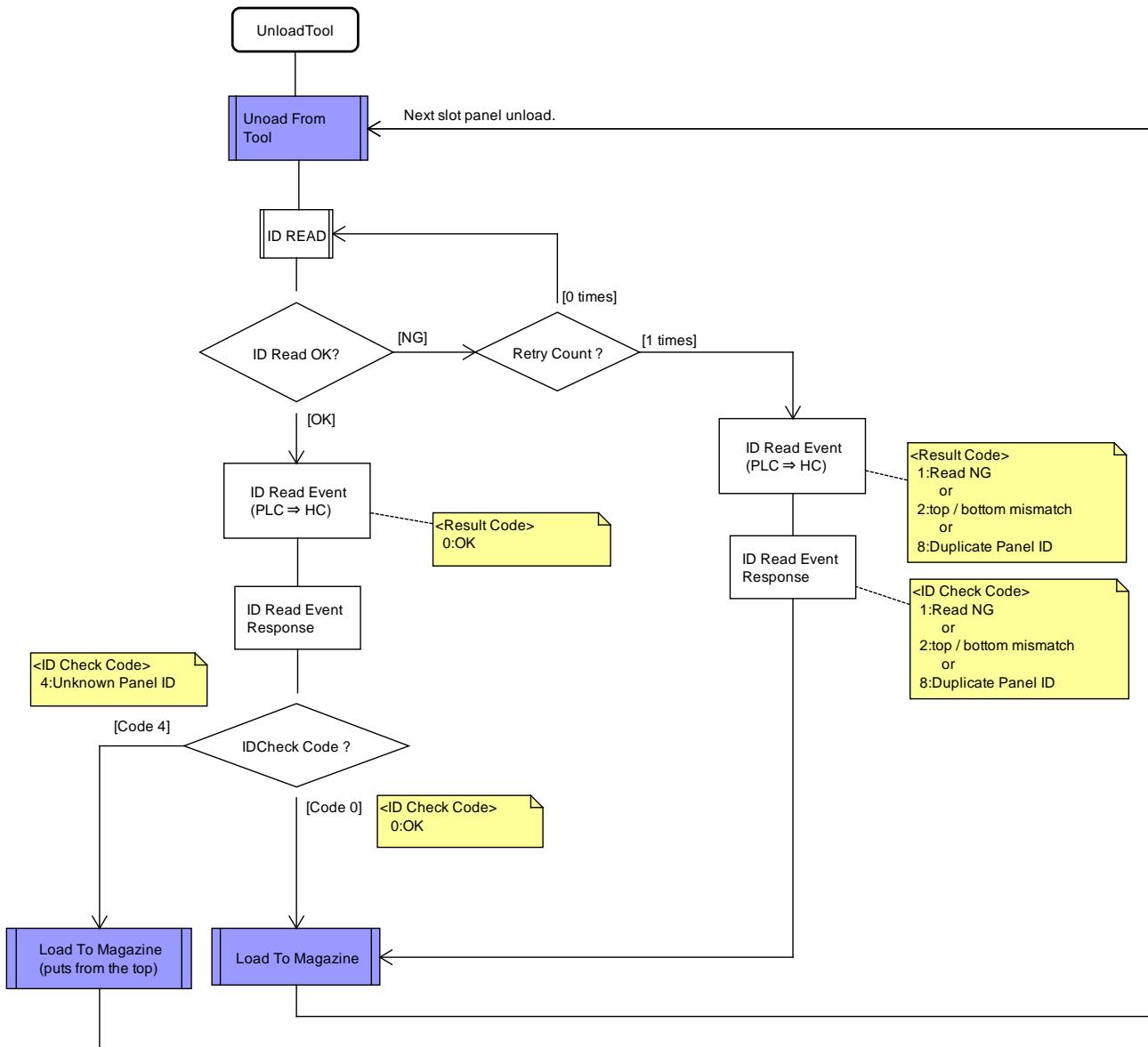
C/V Speed	CVSpeed	Integer	3 to 4 characters	x 0.1mm/s 300 = 30.0 mm/s 1234 = 123.4mm/s
Flip2	Flip2	Boolean	1 character	Y or N This item is ignored excluding VRS mode.

10.3 ID read error flows

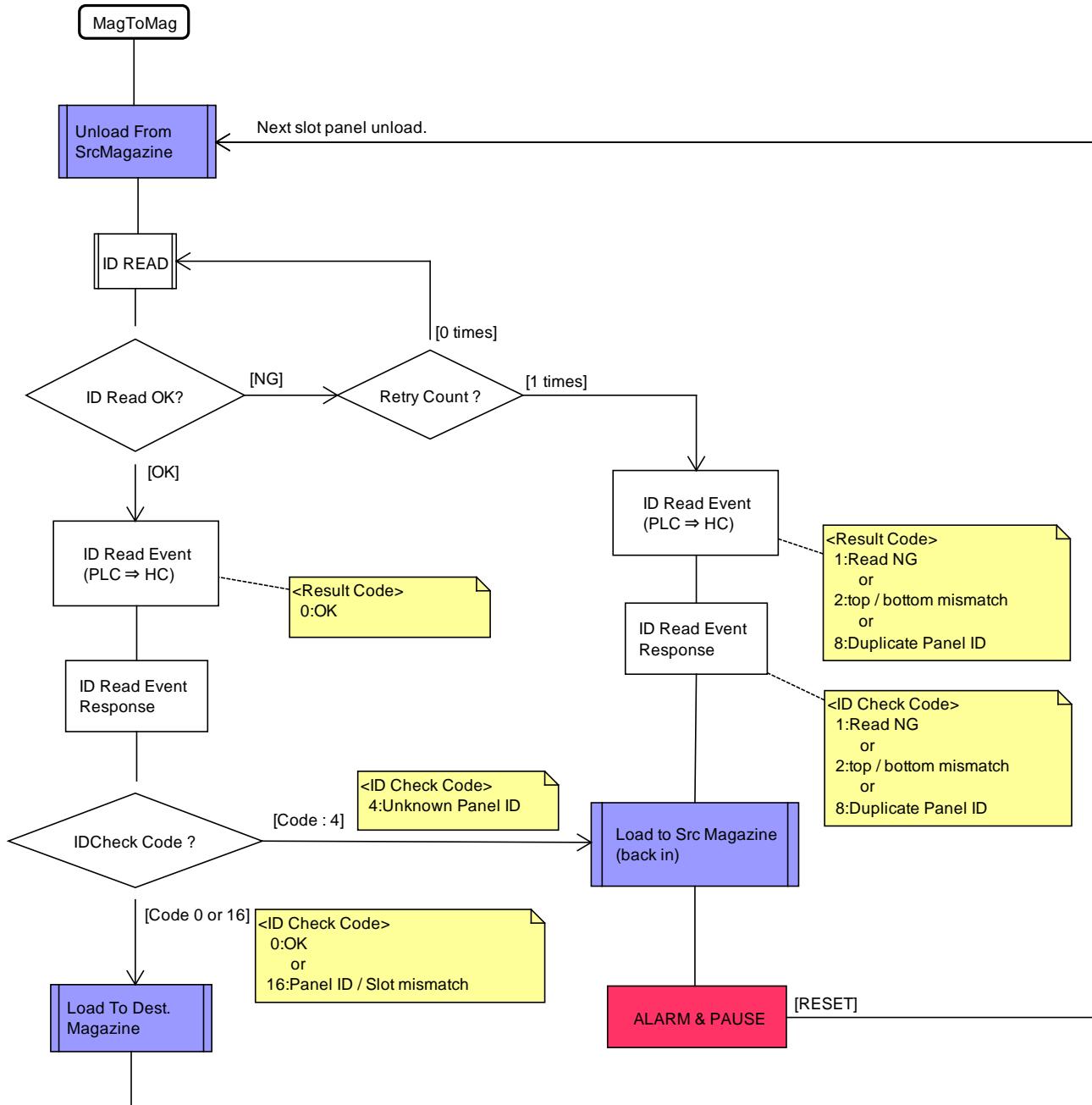
10.3.1 Load Tool flow



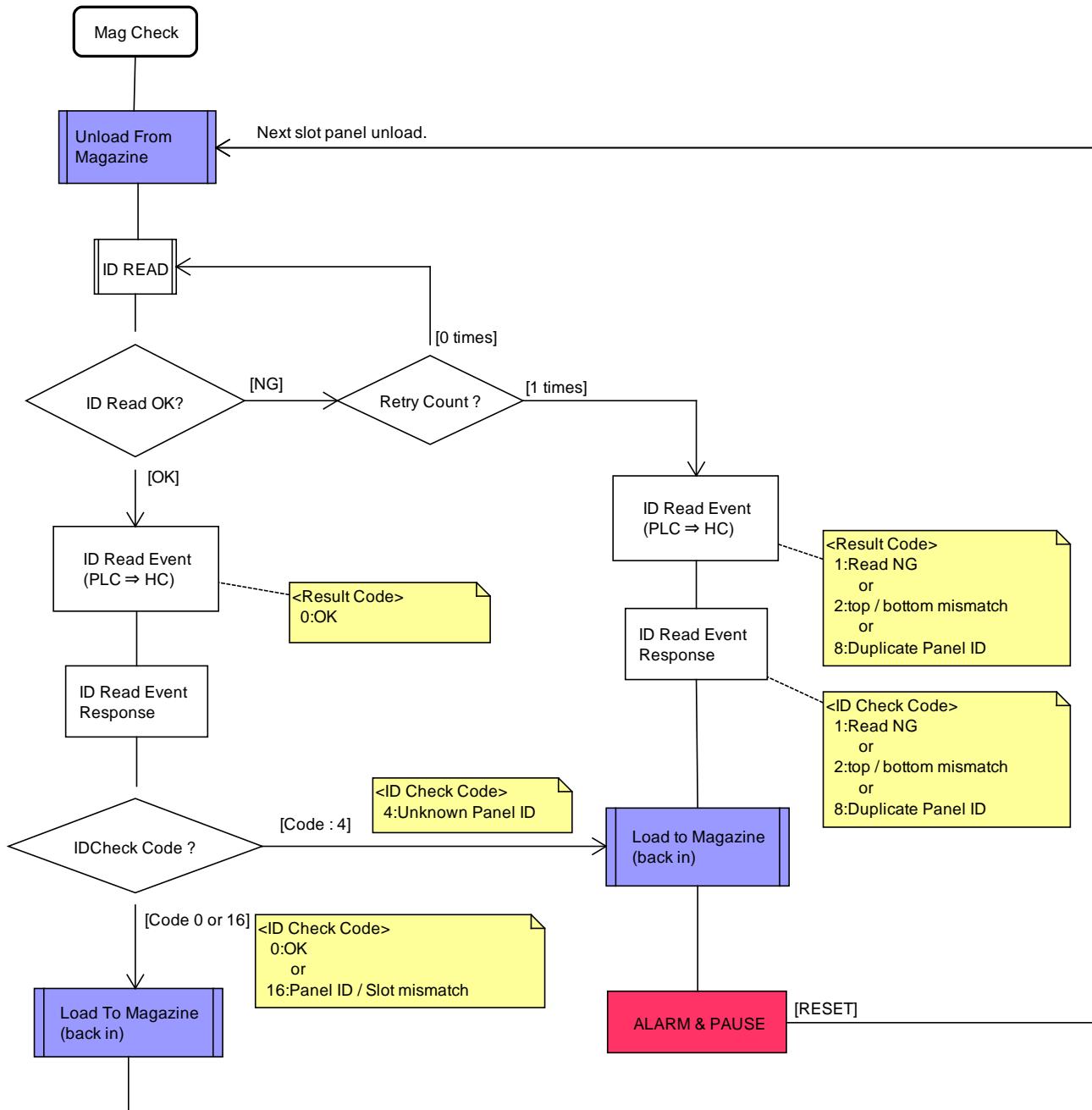
10.3.2 Unload Tool flow



10.3.3 Mag to Mag flow



10.3.4 Mag Check flow



10.4 Timing in which remote command can be accepted

Remote Command	Equipment Processing State											
	INIT	IDLE	READY	EXECUTING	PAUSE				ALARM			
					INIT	IDLE	READY	EXECUTING	INIT	IDLE	READY	EXECUTING
ABORT	x	o	o	o	x	o	o	o	x	o	o	o
GO-LOCAL	o	o	o	o	o	o	o	o	o	o	o	o
GO-REMOTE	o	o	o	o	o	o	o	o	o	o	o	o
PAUSE	x	x	o	o	x	x	x	x	x	x	o	o
PP-SELECT	x	o	o	x	x	o	o	x	x	o	o	x
RESUME	x	x	x	x	x	x	o	o	x	x	x	x
STOP	x	o	o	o	x	o	o	o	x	o	o	o
LOADSTART	x	x	o	o	x	x	o	o	x	x	o	o
UNLOADSTART	x	x	o	o	x	x	o	o	x	x	o	o
TRANSFERMAGTOMAG	x	x	o	o	x	x	o	o	x	x	o	o
CHECKMAG	x	x	o	o	x	x	o	o	x	x	o	o
SETLIGHTTOWER	o	o	o	o	o	o	o	o	o	o	o	o
ENABLE-IDREAD	o	o	o	o	o	o	o	o	o	o	o	o
DISABLE-IDREAD	o	o	o	o	o	o	o	o	o	o	o	o
CHECKSLOT	x	x	o	o	x	x	o	o	x	x	o	o
SETMASTER	x	x	o	x	x	x	o	x	x	x	o	x
REPLYMAGAZINEDOCK	o	o	o	o	o	o	o	o	o	o	o	o
REPLYOPERATORIDCHECK	o	o	o	o	o	o	o	o	o	o	o	o

REPLYIDREAD	x	o	o	o	x	o	o	o	x	o	o	o
ENABLE-REPLYIDREAD	o	o	o	o	o	o	o	o	o	o	o	o
DISABLE-REPLYIDREAD	o	o	o	o	o	o	o	o	o	o	o	o
REPLYMAPPINGCHECK	x	o	o	o	x	o	o	o	x	o	o	o
REPLYOPERATORLOGIN	o	o	o	o	o	o	o	o	o	o	o	o

11 Revision History

Version	Revised Date	Revised by	Details
1.0.0	2/20/2023	Hirofumi Ueda	First version