

Common Equipment HSMS Communication Specification for CIM Program

DOCUMENT ID:	NUMBER OF PAGES: 206
REVISION NO: Ver 3.00	CREATED ON: 2017.09.01
FILENAME:YUNGU_EAS_212_001_Common Equipment HSMS Communication Specification_V3.00	LAST REVISED: 2017.12.12
STATUS: Release	
PREPARED BY: Signature Date	REVIEWED BY: Signature Date
REVIEWED BY: Signature Date	REVIEWED BY: Signature Date
APPROVED BY Signature Date	APPROVED AND ACCEPTED BY Signature Date

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- NOTICE -

This is a preliminary version of PLC Communication Specification for Equipment Automation, and is provided to help Equipment Makers(Venders) to acquire general idea regarding PLC communication guide lines. After determination of CIM vendor, CIM Project team can have Operation Scenario discussion in detail to furnish specific requirement of each Equipment. If any modification is required to fulfill equipment specific operation requirement after Operation Scenario discussion, this specification is subjected to be modified accordingly.

Revision History

Item	Version	Page	Change Place	Writer	Date
1	1.00	179	Initial Version	AIM	
2	2.00		1) FSLOTPOSITION, TSLOTPOSITION Item add S2F107, S6F11 CEID=321~328, 341~348 2) SFCD modify typos 3) RTPID modify typos 4) GLSST length change (1byte->2byte) 5) S1F6 SFCD=02 Description modify 6) SLOTINFO length change (20byte->26byte) 7) SLOTSEL length change (20byte->26byte) 8) HSLOTINFO item create 10) SFCD no change (11->12, 12->13) 11) SLOTPOSITION item create 12) S6F3 CEID=502 Inspection Data /* Only use 1CVIxx equipment *// delete 13) SLOTMAP length change (20byte->26byte) 14) HSLOTMAP item create 15) Cassette In By Unit, Cassette Out by Unit CEID modify typos 16) S7F73/F74 Recipe ID Check create 17) ACK8 create 18) QTY item description modify 19) S6F119/F120 Mask offset information Upload create 20) TRAYID item create 21) S6F11 CEID=230~237 Tray Port Status Change Report create 22) S2F103 Case: Tray Information Download (Tray) add 23) S2F103 Case: Tray Information Download (Cell) add 24) S6F11 CEID=360, 361 Tray Move Out/In add 25) S6F11 CEID=362,363,364, Tray Process End/Abort/Cancel 26) S6F11 CEID=365, Batch Tray Process End	AIM	2017-10-15
3	2.01		1) S6F11 CEID=108, SLOTPOSITION item add	AIM	2017-11.28
4	2.02		1) S1F13 Message create 2) Initialize Scenario modify 3) Tray Port Disable Changed / Tray Port Enable Changed CEID modify typos	AIM	2017-11-28
5	2.03		1) S6F11 CEID=366, Tray Process Start create 2) S6F11 CEID=367,368 Cell In Unit or Port / Cell Out Unit or Port create 3) S6F11 CEID=369, Tray Information Request 4) S6F11 CEID=370, Cell Information Request	AIM	2017-11-30

6	3.00	<p>1. Added Stream Function and Scenario</p> <p>(1) Added Mask Offset Information Download(S2F119)</p> <p>(2) Added Job Reservation Command(S2F121)</p> <p>(3) Added Job Reservation Reset Request(S6F121)</p> <p>(4) Added Remind Job Start Signal(S2F123)</p> <p>(5) Added Port PPID Send(S2F131)</p> <p>(6) Added Glass Call Data Request(S6F131)</p> <p>(7) Added CEID=502, Mask Process Data</p> <p>(8) Added CEID=312, Last Mask Process Start</p> <p>2. Added “MaskID” Item for CEID=335, 336, 337</p> <p>3. Added Loading Stop(S2F401)</p> <p>4. 8.1.4 Mask Cleaner Scenario Modify</p> <p>5. Added Processing Flag</p> <p>6. Modify Description GLSTYPE, MATERIALTYPE</p> <p>7. S6F11 CEID=335 , 336 , 337 Glass Process Start/Abort/End create</p> <p>8. Added Scrap Code content.</p> <p>9. Tray Process Start CEID Change (CEID=366 -> CEID =365)</p> <p>10. Batch Tray Process END CEID Change (CEID=365 -> CEID =366)</p> <p>11. S2F301/S2F302 Mask Eject Request Added</p> <p>12. S2F501/502 Work Order Request Added</p>	AIM	2017-12-12
7	3.01	<p>1. Modify Function Number</p> <p>(1) Mask Eject Reques (S2F301/S2F302 => S2F211/ S2F212)</p> <p>(2) Loading Stop (S2F401/S2F402 => S2F221/ S2F222)</p> <p>(2) Work Order Request (S2F501/S2F502 => S2F231/ S2F232)</p> <p>2. Modify Formatted Status Request (S1F5)</p> <p>3. Modify 8.1.4.2 Port Type : PU Scenario</p> <p>4. Modify 8.1.4.3 Processing (Mask Flow) Scenario</p> <p>5. S6F11 CEID = 115 Material State Report Create</p> <p>6. Modify 4.1 Data Item Dictionary</p> <p>(1) EQSTCODE : 3Byte => 4Byte, Modify EQ Status Code Numbering & Explain</p> <p>(2) UNITSTCODE : 3Byte => 4Byte, Modify Unit Status Code Numbering & Explain</p> <p>(3) SUNITSTCODE : 3Byte => 4Byte, Modify Sub Unit Status Code Numbering & Explain</p> <p>(4) SSUNITSTCODE : 3Byte => 4Byte, Modify Sub Sub Unit Status Code Numbering & Explain</p> <p>7. Added Appendix: Mask Component In/Out sequence diagram</p> <p>8. Modify 8.1.1 ON-LINE REMOTE Mode</p> <p>9. Modify 8.1.2 ON-LINE LOCAL Mode</p> <p>10. Modify 8.1.3 Un-packer Normal Scenario</p>	AIM	2017-12-20

		11. Modify 8.1.5 Sort Scenario		
8	3.02	1. TrayPort Normal Scenario Add 2. Un-Packer, TrayPort, Mask Abnormal Scenario Add 3. Soter, Un-Packer Normal Scenario Modify	AIM	2017-12-29
9	3.03	1.Modify S2F103 Tray Information	AIM	2018-01-02
10	3.04	- 7.5.4 List Alarms Data Request(LAR) ADD - S6F11 CEID = 338 / 339 Cassette Out/In Sub-Unit Create - 8.1.17 CST Cleaner Normal Scenario Add - 8.1.18 Mask CST Cleaner Normal Scenario Add - HSLOTSEL item create - 1.8.13 Slot Position Added	AIM	2018-01-04

※Some details are subject to change.

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1 INTRODUCTION

1.1 General

This specification is used for EQ CIM project as equipment automation common specification and described the SECS-II communication via HSMS protocol between the HOST computer and the EQUIPMENT computer.

The descriptions and the state models described in this document are designed in based on the GEM Standard. Therefore, equipment makers must refer the GEM Standard (SEMI E30).

EQ CIM Engineers and equipment vendors shall conduct sufficient tests on all interfaces between Host and Unit. The tests should be conducted before the equipment is shipped to factory.

In other words, tests on all CIM software Glass (including online) should be completed before their shipment to factory. The equipment vendors must obtain from CIM engineers of factory a document certifying that CIM part of the equipment meet factory specifications, before shipment.

This is preliminary version of Standard Specification between Host and EQP Interface. After determination of CIM vendor, CIM Project team can have Operation Scenario discussion in detail to furnish specific requirement of each Unit. If any modification is required to fulfill equipment specific operation requirement after Operation Scenario discussion, this specification might be modified accordingly. There will be separate test specification based on the latest version of this specification. Each and every equipment supplier is obligated to comply with the latest version of test specification before obtaining Final Acceptance from Customer.

For the specification, Customer reserves the right of final decision in any disputes. During the testing term, whether it is specification discrepancy or software bug, Customer can change the specification without any charge by vendor.

1.2 Scope

1.2.1 Basic Rule

- All interfaces between unit and Host CIM must be fully tested by the unit maker and YUNGU S/W engineer.
- Tests must be performed first prior to the unit being shipped to YUNGU. The unit maker should receive written permission from YUNGU's S/W engineer before shipping.
- When YUNGU implements an online program to interface with the host computer, the unit maker must open technical data and offer technical support in compliance with YUNGU.
- The unit maker should not change the concept or method of the unit without written permission from the YUNGU.

1.2.2 About Documentation

- The unit maker should inform the YUNGU of the information needed for the variation of unit before

implementation and send a document containing that information.

- The unit maker should supply final specification documents in English (2 copies of normal papers and 2 copies of clean papers). These documents should include an Alarm list.
- The unit maker must prepare the operating manual for equipment computer screen and function in English.
- Special functions (Unit operational logic and additional items) should be discussed and through deliberations between the YUNGU and the maker and should be recorded in a written document.

1.2.3 Response Report

- If this specification is not sufficient for unit, discussions with YUNGU are necessary.
- If some cases of errors are not specified in this specification, the unit maker must notify YUNGU.
- After receiving this specification, the unit maker has to submit it within 2 weeks.

1.3 Unit Operation Screen Specification

- The unit must support GUI in basic operational display.
- The unit maker must provide the function whereby the operator is able to input the cassette ID and Glass ID at a equipment computer screen.
- Cassette ID & Glass ID or Chip ID input fields are necessary in the screen
- The unit must support an interface status monitoring screen, and it must include CIMPC, upstream unit and downstream unit.
- The operation screen of the unit must be discussed between the unit maker and the YUNGU engineer before programming, and is recommended to follow the YUNGU standard.

1.4 Unit Type

The unit types are divided into 4 types according to function.

- Loader (LD): In charge of normal input of glasses into unit. It is generally composed of ports and robot.
- Un-loader (ULD): In charge of normal output of glasses from unit. It is generally composed of ports and robot.
- Process Unit (PM): Denotes unit to process glasses, etc., rather than handling the job transferring. It also includes inspection or measurement unit. It is generally composed of process unit or inspection unit.
- Buffer Unit (BM): In charge of interleaving and buffering Job between units. It is generally composed of buffer port and robots.

1.5 Unit Structure

Unit is unit formed by the interconnection of one or more units of unit. Unit is composed of the following.

- Subsub-Unit : Subsub-Unit is the device level component that enables Sub-unit to perform its function

level features. For example, slot is a Subsub-unit that consists of a buffer.

- Sub-Unit : Sub-unit is the function level component. Types in this category are process chamber, transfer robot, conveyor, buffer, etc.
- Unit : Unit is the unit control level component and composed of one or more sub-units. Basically unit has its own controller(PLC) which is involved in the CC-Link network. General types of unit are loader, unloader, process unit , etc.
- Equipment : Equipment is a logical level which manages a group of units which share the host communication interface through a separate controller called EC(Equipment Controller). Unlike others, equipment is not an essential level, which is only used for some special case. (Ex, Photo Track, etc)
- Inline : Inline is the management level component. Basically an inline consists of one or more indexer(or loader & unloader) units and process units. (Ex, Photo inline, Dry etch inline, etc)

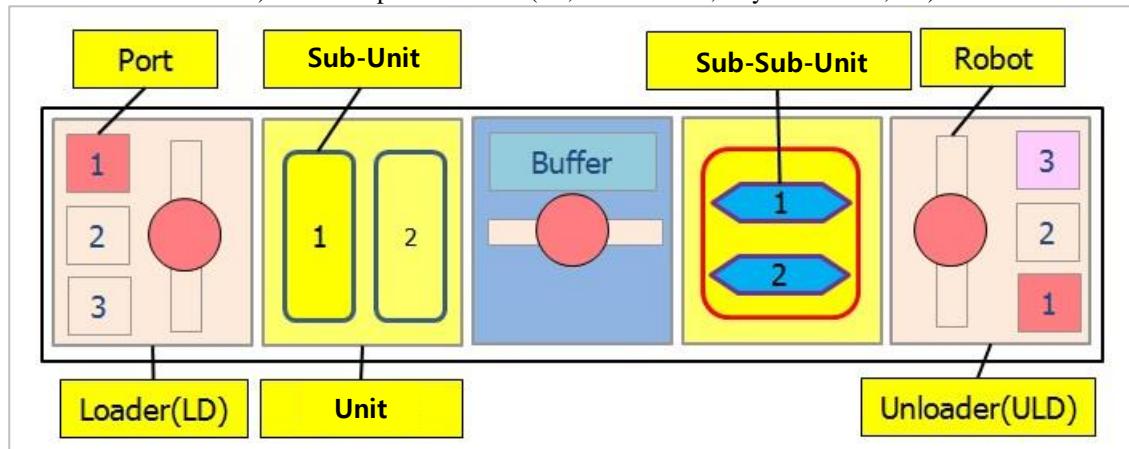


Figure 1-1 Unit Structure

1.6 Anti-Virus System

If Equipment is based on PC and OS is Windows, Equipment Maker needs to install antivirus software. YUNGU has the rights of anti-virus solution update. If any software error, bug or incompatible with system caused by update, manufacturer should maintain for free.

1.7 Test Requirements and Standards

- The equipment maker should support to do Office Site Simulator Test. Support the maker Site Test or not, it would decide by YUNGU.
- In Office Site Simulator Test: the test place is in YUNGU Office, maker should prepare Equipment computer Screen and CIM Software for Office Site Simulator Test use. YUNGU would prepare Simulator Tool, Check List and Cable for Office Site Simulator Test use.
- In Maker Site Test: test place is in Maker Factory; maker should prepare Actual Unit, Equipment computer screen and CIM Software for Maker Site Test use. YUNGU would prepare Simulator Tool, Check List and Cable for Maker Site Test use. Office Site Simulator Test and Maker Site Test, the test result of scores should reach or over 80 points; FAB Test, the test result of scores should reach 100 point (full point).
- If maker can't reach the standard point (90 points) in Office Site Simulator Test or Maker Site Test and need test again, the re-test would charge 3,500 RMB per day (8 hours).

1.8 ID Definitions

The following items define the data id of some common items that could be asked to input by operator console, ID reader or host message. The word should be left alignment.

1.8.1 Lot ID

- Meaning: Lot Identification or **Lot Number**
- Format: ASCII
- Length: **20 Bytes**
- Description: Host download lot id to equipment or operator key-in through control panel in equipment. Equipment should use this one to send message events – Process Events (Start, End, Abort and etc.), Alarm Report, and Data collection – and also to trace processing lot history in equipment.

1.8.2 Cassette ID

- Meaning: Cassette Identification or **Cassette Number**
- Format: ASCII
- Length: **20 Bytes**
- Description: Equipment will read cassette id from cassette on port using the ID reader and send message to her host. It is very important information to host. Host will decide that the cassette is transferred correctly or incorrectly and also will judge to command to the equipment.

1.8.3 PPID (Process Program ID / Recipe ID)

- Meaning: Recipe Identification or **Process Program ID**
- Format: ASCII
- Length: **40 Bytes**
- Description: Host can use PPID as means of process control. The information from host must be matched to data that equipment saves, unless equipment should be don't work for safety.

1.8.4 PPARAMVALUE (Process Parameter)

- Meaning: Parameter of Recipe Identification or **Process Program Name**
- Format: ASCII
- Length: **40 Bytes**
- Description: Numeric or Boolean SECS data item, single or multiple value or text string which provides information required to complete the process command to which the parameter refers.

1.8.5 Mask ID

- Meaning: Mask Identification or **Mask number used at exposure unit**
- Format: ASCII
- Length: **30 Bytes**

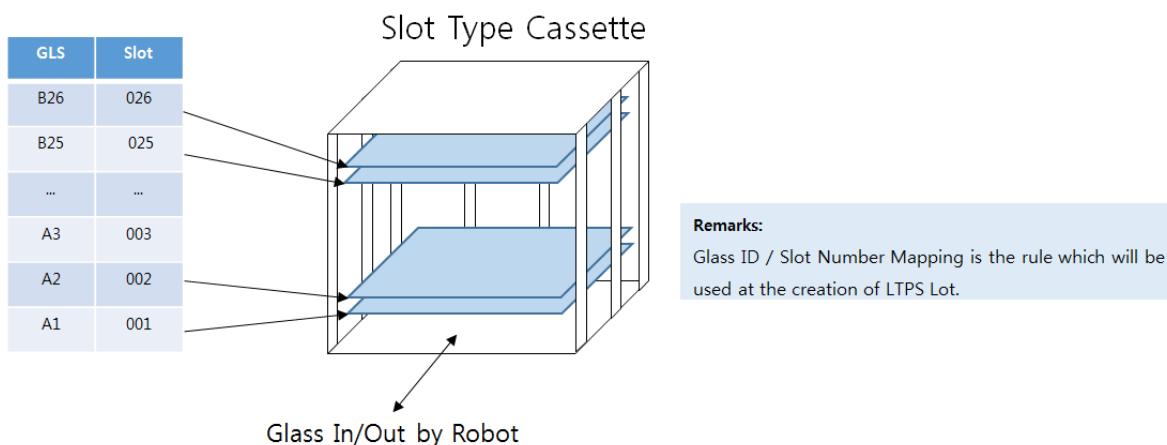
- Description: The mask id may be used to verify that the equipment which has some exposure units has a mask that is correctly set up.

1.8.6 Port ID

- Meaning: Port Identification or Port Number
- Format: ASCII
- Length: **3 Bytes**
- Description: 'P01', 'P02', 'P03' (from left side when the operator sees at front it).

1.8.7 Slot No

- Meaning: Slot Identification or Slot Index
- Format: ASCII
- Length: **3 Bytes**
- Description: '001', '002', '003', '015', '020'...etc. (from bottom side when the operator sees at front Slot and from left side when the operator sees at front CST)



1.8.8 Glass ID

- Meaning: Glass Identification or Glass Number
- Format: ASCII
- Length: **20 Bytes**
- Description: This information is downloaded to the equipment from host. And it is concerned with the recipe management.

1.8.9 Unit ID

- Meaning: Unit Identification
- Format: ASCII
- Length: **10 Bytes**

- Description: In-Line / Multi Type EQP. Follow unit ID rule of each equipment.

1.8.10 Sub Unit ID

- Meaning: Sub-Unit Identification (It also used for chamber type sub unit.)
- Format: ASCII
- Length: 20 Bytes
- Description: Sub-Units are the components at the lower level of Unit. Sub-Unit has a material location and performs some task on material.

1.8.11 SSub Unit ID

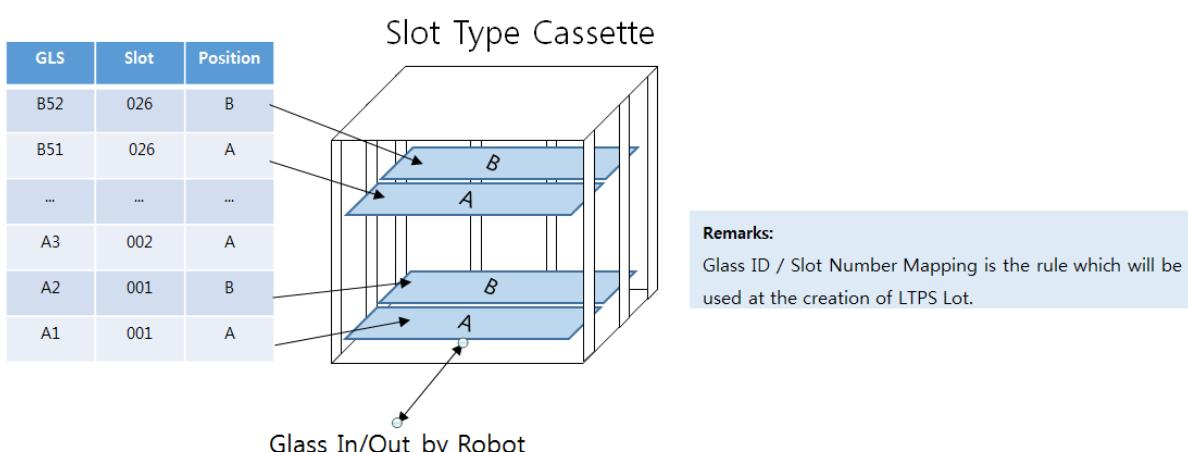
- Meaning: Sub-Sub-Unit Identification (It also used for chamber type sub unit.)
- Format: ASCII
- Length: 20 Bytes
- Description: Sub-Sub-Units are the components at the lower level of Unit. Sub-Sub-Unit has a material location and performs some task on material.

1.8.12 Material ID

- Meaning: Material Identification
- Format: ASCII
- Length: **30 Bytes**
- Description: This is a Consumable or Durable Material Identification.

1.8.13 Slot Position

- Meaning: Position Identification or Slot Index
- Format: ASCII
- Length: 1 Bytes
- Description: ‘A’ ‘B’ (A:Front (close to the outside of slot), B: Back(close to the inside of slot))



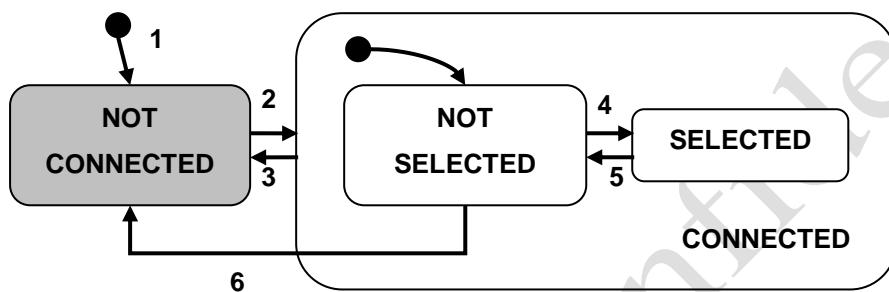
2 HSMS SPECIFICATION

2.1 Connection State Model

2.1.1 Purpose

HSMS provides a means for independent manufacturers to produce implementations which can be connected and interoperate without requiring specific knowledge of one another.

2.1.2 Diagram



2.1.3 Transition Table

#	Current State	Trigger	New State	Comments
1	Undefined	Local entity-specific preparation for TCP/IP communication	NOT CONNECTED	
2	NOT CONNECTED	A TCP/IP connection is established for HSMS communication	NOT SELECTED	
3	CONNECTED	Breaking of TCP connection	NOT CONNECTED	
4	NOT SELECTED	Successful completion of HSMS Select Procedure	SELECTED	
5	SELECTED	Successful completion of HSMS Deselect or Separate	NOT SELECTED	
6	NOT SELECTED	T7 Connection Timeout	NOT CONNECTED	

2.1.4 Basic Parameter Setting

Parameter Name	Value Range	Resolution	Typical Value
T3 Reply Timeout	1-120 seconds	1 seconds	45 seconds
T5 Connect Separation Timeout	1-240 seconds	1 seconds	10 seconds
T6 Control Transaction Timeout	1-240 seconds	1 seconds	5 seconds
T7 NOT SELECTED Timeout	1-240 seconds	1 seconds	10 seconds
T8 Network Inter-character Timeout	1-120 seconds	1 seconds	5 seconds

Conversation Timeout	1-600 seconds	1 seconds	60 seconds
Connect Mode	(Default) HOST: Active, EQUIPMENT: Passive Equipment should provide the function that connect mode can be changed from Active to Passive or from Passive to Active.		
Local Entity IP Address & Port number	Specified		
Remote Entity IP Address & Port number	Specified		

2.1.4.1 • T3 Reply Timeout

The T3 reply timeout is limit on the length of time that the HSMS message protocol is willing to wait for a Reply message.

After sending a Primary Message with W-bit 1 (Reply Expected), the sender must begin a reply timer, initialized to the T3 value. If the sender does not receive the Reply Message before the reply timer expires, then a T3Timeout Error has occurred. The sender should close the transaction and no longer expect the Reply Message. Each open transaction for which a Reply is expected requires a separate reply timer.

2.1.4.2 • T5 Connect Separation Timeout

The connect procedures initiate some network activity. Frequent use of the active mode connect procedure to the IP Address and Port Number of an entity not yet ready to accept connections can be hostile to TCP/IP operations. The passive mode does not generate network activity and is not considered hostile to the network, although it may affect local application performance. An Entity initiating a connection in the active mode should limit its use of the connect procedure in a manner that is equivalent to the procedure described here.

After an active connect procedure terminates by any means (successfully or unsuccessfully), the Entity should not initiate another active connect procedure (for the same Remote Entity) until the T5 Connect Separation Time has elapsed. The separation of connect operations will be the sum of the T5 Connect Separation Time interval, plus the duration of the connect operation itself.

2.1.4.3 • T6 Control Transaction Timeout

Control Timeout in the HSMS protocol which defines the maximum time an HSMS control transaction can remain open before a communications failure is considered to have occurred. A transaction is considered open from the time the initiator sends the required request message until the response message is received.

2.1.4.4 • T7 NOT SELECTED Timeout

Entry into the NOT SELECTED state is achieved either by state transition #2 (establishment of a TCP/IP Connection). There is a time limit on how long an entity is required to remain in the NOT SELECTED state before either entering the SELECTED state or by returning to the NOT CONNECTED state.

Some entities, particularly those unable to accept more than a single TCP/IP connection, may be impaired in their operation by remaining in their NOT SELECTED state as they will be unavailable for communications with other entities. Such entities shall disconnect the TCP/IP connection (State Transition Event #3) if communication

remains in the NOT SELECTED state for longer than the T7 timeout period.

2.1.4.5 ■ T8 Network Inter-character Timeout

Because TCP/IP is a stream rather than a message protocol, it is possible that bytes which are all part of a single HSMS message may be transmitted in separate TCP/IP messages without any violation of the TCP/IP protocol. Since it is possible that these separate messages may be separated by a substantial period, the Network Inter-character Timeout (T8) is defined.

T8 is similar in purpose to the SECS-I T1 timer except that the communications issues which necessitate T8 are not entirely in the control of the sender of the message. Therefore, it is defined only in terms of the receiver of the message. In particular, if after receipt of a partial message, the T8 timeout period expires prior to receipt of the complete message, the receiving entity shall consider such case as a communications failure, as defined above.

2.1.4.6 ■ Conversation Timeout

A conversation timeout is used to indicate that a conversation has not completed properly. A conversation timeout is application-dependent, and the methods used for detecting conversation timeouts are not covered as part of this standard. A conversation timeout will terminate further action on the conversation, and will allow for the clearing of any committed resources. Upon detection of a conversation timeout at the equipment, S9F13 should be sent to the host.

2.1.4.7 ■ Connect Mode

It specifies the logic this local entity will use during HSMS connection establishment. The connect mode is always set to PASSIVE in the equipment and to ACTIVE in the host.

2.1.4.8 ■ Local Entity IP Address and Port Number

Required for any entity operating in PASSIVE mode. Determines the address on which the local entity will listen for incoming connection requests.

2.1.4.9 ■ Remote Entity IP Address and Port Number

Required for any entity operating in ACTIVE mode. Determines the address of the remote entity to which the local entity will attempt to connect.

3 SECS-II MESSAGE SUMMARY

3.1 Stream / Function List

S: Stream Number

F: Function Number

S	F (Pri)	F (Sec)	1'st Message Direction	Function Name	Description
*	-	0	H↔E	Transaction Abort	
1	1	2	H↔E	Are You There Request (R)	
1	3	4	H→E	Selected Equipment Status Request (SSR)	
1	5	6	H→E	Formatted Status Request (FSR)	
				SFCD=01, Equipment Status Request	
				SFCD=02, Port Status Request	
				SFCD=03, Operation mode Request	
				SFCD=04, Unit Status Request	
				SFCD=05, Sub-Unit Status Request	
				SFCD=06, Sub-Sub-Unit Status Request	
				SFCD=07, Mask Status Request	
				SFCD=08, Material Status Request	
				SFCD=09, Sorter Job List Request	
				SFCD=10, Crate Port Status Request	
				SFCD=11, Half Port Status Request	
				SFCD=12, Port load-request and Unload-Request report start	
				SFCD=13, Equipment Recycle mode Request	
1	11	12	H→E	Status Variable NameList Request (SVNR)	
1	13	14	H↔E	Establish Communication Request	
1	15	16	H→E	Request OFF-LINE (ROFL)	
1	17	18	H→E	Request ON-LINE (RONL)	
2	13	14	H→E	Equipment Constants Request (ECR)	
2	15	16	H→E	New Equipment Constants Send (ECS)	
2	17	18	H↔E	Date & Time Request (DTR)	
2	23	24	H→E	Trace Initialize Send (TIS)	
2	29	30	H→E	Equipment Constant NameList Request (ECNR)	
2	31	32	H→E	Date and Time Set Request (DTS)	
2	37	38	H→E	Enable or Disable Event Report (EDER)	
2	39	40	H→E	Enable or Disable Event List Report (EDER)	
2	41	42	H→E	Host Command Send (HCS)	
				RCMD=1, START	
				RCMD=2, CANCEL	
				RCMD=3, ABORT	

S	F (Pri)	F (Sec)	1'st Message Direction	Function Name	Description
				RCMD=4, PAUSE	
				RCMD=5, RESUME	
				RCMD=6, OPERATOR CALL	
				RCMD=7, Mask Cassette Cancel	
				RCMD=8, Unpacker BarCodeData (crate-id) result	
				RCMD=9, Recycle	
2	53	54	H→E	Crate glass QTY download	
2	103	104	H→E	Cassette Information Download (Glass)	
2				Tray Information Download (Tray)	
2				Tray Information Download (Cell)	
2	105	106	H→E	Empty CST Permission	
2	107	108	H→E	Sorter Job Command	
2	109	110	H→E	Mask cassette information Download	
2	111	112	H→E	Mask cassette information Download EVA	
2	119	120	H→E	Mask offset information Download	
2	121	122	H→E	Job Reservation Command	
2	123	124	H→E	Remind Job Start Signal	
2	131	132	H→E	Port PPID Send	
2	203	204	H→E	Send Packing box ID	
2	211	212	H→E	Mask Eject Request	
2	221	222	H←E	Loading Stop	
2	231	232	H←E	Work Order Request	
5	1	2	H←E	Alarm Report Send (Extended)(ARS)	
5	3	4	H→E	Enable/Disable Alarm Send (EAS)	
5	5	6	H→E	List Alarm Data Request(LAR)	
5	103	104	H→E	Current Alarm List Request (CALR)	
6	1	-	H←E	Trace Data Send (TDS)	
6	3	4	H←E	Discrete Variable Data Send (DVS)	
				CEID=500, Glass Process Data	
				CEID=501, Lot Process Data	
				CEID=502, Mask Process Data	
6	11	12	H←E	Event Report Send (ERS)	
				CEID=104, Operation mode Status Change	
				CEID=105, Unit Status Change	
				CEID=106, Sub-Unit Status Change	
				CEID=107, SSub-Unit Status Change	
				CEID=108, Material Change	
				CEID=109, Equipment Constant Change	
				CEID=110, Ready To Start	
				CEID=111, Control State Change(OFF-LINE)	

S	F (Pri)	F (Sec)	1'st Message Direction	Function Name	Description
				CEID=112, Control State Change (ON-LINE LOCAL)	
				CEID=113, Control State Change (ON-LINE REMOTE)	
				CEID=114, Equipment Status Change	
				CEID=115, Material List Report	
				CEID=118, Operator Confirm Event About Operator Call Command	
				CEID=200, Load Request	
				CEID=201, Pre - Load Complete	
				CEID=202, Load Complete	
				CEID=203, Unload Request	
				CEID=204, Unload Complete	
				CEID=205, Port Disable Changed	
				CEID=206, Port Enable Changed	
				CEID=207, Port Type Changed	
				CEID=208, Port Use Type Changed	
				CEID=209, Transfer Mode Changed	
				CEID=210, Crate Port Load Request	
				CEID=211, Remained Glass Count of Crate Report	
				CEID=212, Crate Port Load Complete	
				CEID=213, Crate Port Unload Request	
				CEID=214, Crate Port Unload Complete	
				CEID=215, Crate Port Disabled	
				CEID=216, Crate Port Enabled	
				CEID=217, Crate Port Type Changed	
				CEID=218, Crate Port Use Type changed	
				CEID=219, Crate Port Transfer Mode Change	
				CEID=220, Mask Cassette Port Load Request	
				CEID=221, Mask Cassette Port Pre - Load Complete	
				CEID=222, Mask Cassette Port Load Complete	
				CEID=223, Mask Cassette Port Unload Request	
				CEID=224, Mask Cassette Port Unload Complete	
				CEID=225, Mask Cassette Port Disable Changed	
				CEID=226, Mask Cassette Port Enable Changed	
				CEID=227, Mask Cassette Port Type Changed	
				CEID=228, Mask Cassette Port Use Type Changed	
				CEID=229, Mask Cassette Port Transfer Mode Changed	
				CEID=230, Tray Port Load Request	
				CEID=231, Tray Port Load Complete	
				CEID=232, Tray Port Unload Request	
				CEID=233, Tray Port Unload Complete	
				CEID=234, Tray Port Disable Change	

S	F (Pri)	F (Sec)	1'st Message Direction	Function Name	Description
				CEID=235, Tray Port Enable Change	
				CEID=236, Tray Port Type Change	
				CEID=237, Tray Port Use Type Change	
				CEID=301, Process Start	
				CEID=304, Process Cancel	
				CEID=305, Process Abort	
				CEID=306, Process Pause	
				CEID=307, Process Resume	
				CEID=309, EQP Stop	
				CEID=311, Last Glass Process Start	
				CEID=312, Last Mask Process Start	
				CEID=321, Glass Out By Indexer Event	
				CEID=322, Glass In By Indexer Event	
				CEID=323, Glass Out By Unit Event	
				CEID=324, Glass In By Unit Event	
				CEID=325, Glass Out By Sub-Unit Event	
				CEID=326, Glass In By Sub-Unit Event	
				CEID=327, Glass Out By SSub-Unit Event	
				CEID=328, Glass In By SSub-Unit Event	
				CEID=329, Cassette In By Unit	
				CEID=330, Cassette Out By Unit	
				CEID=331, Glass Scrap Event	
				CEID=332, Glass Un-scrap Event	
				CEID=334, Glass Turn Event	
				CEID=335, Glass Process Start	
				CEID=336, Glass Process Abort	
				CEID=337, Glass Process End	
				CEID=338, Cassette In By Sub-Unit	
				CEID=339, Cassette Out By Sub-Unit	
				CEID=341, Mask Out By Indexer Event	
				CEID=342, Mask In By Indexer Event	
				CEID=343, Mask Out By Unit Event	
				CEID=344, Mask In By Unit Event	
				CEID=345, Mask Out By Sub-Unit Event	
				CEID=346, Mask In By Sub-Unit Event	
				CEID=347, Mask In Line	
				CEID=348, Mask Out Line	
				CEID=349, Mask Cassette In By Sub-Unit	
				CEID=350, Mask Cassette Out By Sub-Unit	
				CEID=351, Mask into shelf	

S	F (Pri)	F (Sec)	1'st Message Direction	Function Name	Description
				CEID=352, Mask out from shelf	
				CEID=360, Tray Move Out	
				CEID=361, Tray Move In	
				CEID=362, Tray Process End	
				CEID=363, Tray Process Abort	
				CEID=364, Tray Process Cancel	
				CEID=365, Tray Process Start	
				CEID=366, Batch Tray Process End	
				CEID=367, Cell In Unit or Port	
				CEID=368, Cell Out Unit or Port	
				CEID=369, Tray Information Request	
				CEID=370, Cell Information Request	
				CEID=401, Process Program or Recipe Change	
				CEID=411, Assemble Complete	
				CEID=412, Glass Cut Process Event	
				CEID=431, Sorting Job Process Start	
				CEID=432, Sorting Job Process End	
				CEID=433, Sorting Job Cancel Begin	
				CEID=434, Sorting Job Cancel End	
				CEID=435, Sorting Job Abort Begin	
				CEID=436, Sorting Job Abort End	
				CEID=440, Material used count change	
				CEID=450, Un-packer Bar Code Data Read	
				CEID=460, VCR Data Read	
				CEID=701, Recycle mode change report	
6	103	104	H←E	Cassette Information Upload (CIU)	
				Glass Information Upload	
6	109	110	H←E	Mask Cassette Information Upload	
6	119	120	H←E	Mask Offset Information Upload	
6	121	122	H←E	Job Reservation Reset Request	
6	131	132	H←E	Glass Call Data Request	
6	203	204	H←E	Packing box information upload	
7	19	20	H→E	Current EPPD Request (RER)	
7	23	24	H→E	Formatted Process Program Send (FPS)	
7	25	26	H→E	Formatted Process Program Request (FPR)	
9	1	-	H←E	Unrecognized Device ID (UDN)	
9	3	-	H←E	Unrecognized Stream Type (USN)	
9	5	-	H←E	Unrecognized Function Type(UFN)	
9	7	-	H←E	Illegal Data (IDN)	
9	9	-	H←E	Transaction Timer Timeout (TTN)	

S	F (Pri)	F (Sec)	1'st Message Direction	Function Name	Description
9	13	-	H←E	Conversation Timeout (CTN)	
10	1	2	H←E	Terminal Request	
10	5	6	H→E	Terminal Display, Multi-block (VTN)	

4 DATA ITEM DEFINITIONS

4.1 Data Item Dictionary

This section defines the data items used in the standard SECS-II messages described in Section Message Detail.

Name : A unique mnemonic name for this data item. This name is used in message definitions.

Format : The allowable item format codes which can be used for this standard data item. Item format codes are shown in octal, as described in Table 1, Item Format Codes. The notation "3()" indicates any of the signed integer formats (30, 31, 32, 34). The notation "4()" indicates any of the floating-point formats (40, 44). The notation "5()" indicates any of the unsigned integer formats (50, 51, 52, 54). The notation "0" indicates that a list with user-defined structure may be used. Where more than one format is shown, a given implementation can use any of the formats specified.

All items should be in accordance with this SPEC. Different items (or parameters) should be in accordance with done items and can be distinguished. If the items made by vendor exceed this SPEC items length, they must cut them shorter but can be distinguished.

Notice:

The length (or size) of every item's value is fixed.

For example, reporting 10-byte item.

Even if EQP occurred real value 5 bytes “ABCDE”, EQP should report correct length that real 5 bytes value with fill 5 bytes blank.

SYMBOL	Meaning	OCTAL
L	List	00
B	Binary	10
BL	Boolean	11
A	ASCII	20
I8	8-Byte Signed Integer	30
I1	1-Byte Signed Integer	31
I2	2-Byte Signed Integer	32
I4	4-Byte Signed Integer	34
F8	8-Byte Floating Point	40
F4	4-Byte Floating Point	44
U8	8-Byte Unsigned Integer	50
U1	1-Byte Unsigned Integer	51
U2	2-Byte Unsigned Integer	52
U4	4-Byte Unsigned Integer	54

Description : A description of the data item, with the meanings of specific values.

Where Used: The standard messages in which this data item appears.

Item Name	Description	Byte	Format
ACK	Acknowledge Code	1	20
0: Accepted,			
1: Not Accepted.			
Where Used: S2F54, S6F104, S2F122			

Item Name	Description	Byte	Format
ACKC10	Acknowledge code	1	20
0: Accepted,			
1: Not Accepted.			
Where Used: S10F2, S10F6			

Item Name	Description	Byte	Format
ACKC5	Acknowledge code	1	20
0: Accepted,			
1: Not Accepted,			
2: Not Exist ALID.			
Where Used: S5F2, S5F4			

Item Name	Description	Byte	Format
ACKC6	Acknowledge code	1	20
0: Accepted,			
1: Not Accepted,			
Where Used: S2F120, S6F12, S6F120			

Item Name	Description	Byte	Format
ACKC7	Acknowledge code	1	20
0: Accepted,			
1: Not Accepted.			
2: UnitID is not exist			
3: PPTYPE is not match			
4: PPID is not match			
Where Used: S7F24			

Item Name	Description	Byte	Format
ACKC8	Acknowledge code	1	20

0: OK

1: PPID is not match

2: PPTYPE is not match

3: LCTIME is not match

Where Used: S7F24

Item Name	Description	Byte	Format
ALCD	Alarm Code	1	20

1: Light Alarm,

2: Serious Alarm.

Where Used: S5F1, S5F6

Item Name	Description	Byte	Format
ALED	Alarm Enable/Disable	1	20

0: Enable,
1: Disable.

Where Used: S5F3

Item Name	Description	Byte	Format
ALID	Alarm ID	10	20

Alarm Identification.

Where Used: S5F1, S5F3, S5F5

Item Name	Description	Byte	Format
ALST	Alarm Status	1	20

1: Set,
2: Clear.

Where Used: S5F1

Item Name	Description	Byte	Format
ALTX	Alarm text	80	20

Alarm text limited to 80 characters.

Where Used: S5F1

Item Name	Description	Byte	Format
ARRAYREPAIRTYPE	Array cut repair type	800	20

All panels of a glass had been processed CUT Repair or not.

* Format: CUTREPAIRTYPES = "XXAXXXAAXXXXAXA..."

X: A panel of glass had not been processed Array CUT Repair.

A: A panel of glass had been processed Array CUT Repair.

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
ASSYGLSGRADE	Assembly Glass Grade	1	20
(EX) A, B, C			
<u>Where Used:</u> S2F103, S6F103			

Item Name	Description	Byte	Format
ATGLSGRADE	Array Test Glass Grade	1	20
(EX) A, B, C			
<u>Where Used:</u> S2F103, S6F103			

Item Name	Description	Byte	Format
ATREPAIR	Array Test Repair	5	20
(EX) G: Good, N: NG			
<u>Where Used:</u> S2F103, S6F103			

Item Name	Description	Byte	Format
BARCODEDATA	Unpacker crate boxID	20	20
Unpack Crate cassette barcode Data			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
BARCODEDATARESULT	Unpacker crate boxID check result	1	20
0: OK			
1: NG			
<u>Where Used:</u> S2F41			

Item Name	Description	Byte	Format
BOXID	Packing Box ID	20	20
This item use at Packing EQP only.			
<u>Where Used:</u> S2F203			

Item Name	Description	Byte	Format
CCODE	Command Code	3	20

Each command code corresponds to a unique process operation the unit can perform.

Where Used: S7F26

Item Name	Description	Byte	Format
CEED	Collection event or trace enable/disable code	1	20
0: Enable,			
1: Disable.			
<u>Where Used:</u> S2F37			

Item Name	Description	Byte	Format
CEID	Collected event ID	3	20
Refer to 5.3.1.2. EVENT DATA COLLECTION.			
<u>Where Used:</u> S2F37, S6F3, S6F11			

Item Name	Description	Byte	Format
CIACK	Cassette Information Acknowledge Code	1	20
0: Accepted			
1: Busy			
2: CSTID is Invalid			
3: PPID is Invalid			
4: SLOT Information mismatch			
5: Already Received Cassette Information			
6: PAIR LOT mismatch * in case of Assembly Inline EQP			
7: PRODID Invalid * in case of SORTER EQP			
8: GlassTYPE is invalid			
9: Other Errors			
<u>Where Used:</u> S2F104			

Item Name	Description	Byte	Format
CMST	Communication State	1	20
0: Enabled, 1: Disabled			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
COMMACK	Communication Acknowledge	1	20
0: Enabled, 1: Disabled			
<u>Where Used:</u> S1F14			

Item Name	Description	Byte	Format
CRATEID	Crate Identification or Crate Number	20	20
Unpacker only			
Where Used: S2F53, S2F103, S6F11, S6F103			

Item Name	Description	Byte	Format
CRATEQTY	Glass count of Crate	3	20
Unpacker only			
Where Used: S6F11			

Item Name	Description	Byte	Format
CRATEPROCESSEDQTY	Processed Glass count of Crate	3	20
Unpacker only			
Where Used: S6F11			

Item Name	Description	Byte	Format
CRST	Control State	1	20
O: OFF-LINE,			
R: ON-LINE REMOTE,			
L: ON-LINE LOCAL.			
Where Used: S1F6, S1F17, S6F11			

Item Name	Description	Byte	Format
CSTENDFLAG	End CST status Flag	1	20
Some CST has "Abort" process. At that status to distribute normal CST or Abort CST.			
0: Normal end			
1: Abort end			
Where Used: S6F103			

Item Name	Description	Byte	Format
CSTID	Cassette Identification or Cassette Number	20	20
Formal CSTID			
Where Used: S1F6, S2F41, S2F103, S2F105, S6F11, S6F103, S6F33			

Item Name	Description	Byte	Format
CUTGLSGRADE	Cut Glass Grade	1	20
After cut glass, EQP give this value to each glass.			
A: A grade			

B: B grade

Where Used: S6F11

Item Name	Description	Byte	Format
CUTGLSID	Cut Q-Glass ID, Panel ID	20	20

After cut glass, the cut EQP gives new name to each cut glass.

Where Used: S6F11

Item Name	Description	Byte	Format
CUTGLSJUDGE	Cut glass judge	1	20

G: Good,**N:** Not Good,**R:** Rework,**P:** RePair,**S:** Scrap.**F:** Fault**V:** Virtual**I:** Inspection**Where Used:** S6F11

Item Name	Description	Byte	Format
CUTGLSX	Cut Glass X-axis	2	20

(EX) 01, 02

After cut the sheet divided 4 of Quarter cut glasses.

1st glass (CUTGLSX=1, CUTGLSY=1)

2nd glass (CUTGLSX=1, CUTGLSY=2)

3rd glass (CUTGLSX=2, CUTGLSY=1)

4th glass (CUTGLSX=2, CUTGLSY=2)

Where Used: S6F11

Item Name	Description	Byte	Format
CUTGLSY	Cut Glass Y-axis	2	20

(EX) 01, 02

After cut the sheet divided 4 of Quarter cut glasses.

1st glass (CUTGLSX=1, CUTGLSY=1)

2nd glass (CUTGLSX=1, CUTGLSY=2)

3rd glass (CUTGLSX=2, CUTGLSY=1)

4th glass (CUTGLSX=2, CUTGLSY=2)

Where Used: S6F11

Item Name	Description	Byte	Format
DATAID	DATA ID	4	20

The data ID for the most recent event report.

DATAID value will be always ‘0’ or increase sequentially.

Where Used: S6F11

Item Name	Description	Byte	Format
DSPER	Data Sample Period	6	20

Where “hh” is hours, “mm” is minutes, “ss” is seconds.

Time Format: “hhmmss”.

Where Used: S2F23

Item Name	Description	Byte	Format
DUMUSEDcnt	Current Dummy Used Count	4	20

After using dummy glass, DUMUSEDCOUNT should be added 1.

Remark:

- DUMUSEDCOUNT should be managed in Cell Inline Equipment.
- Equipment shall report accumulated count to host.

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
DV	Data Value	40	20

After moving out from process unit, EQP report result data value insert to this item.

Where Used: S6F3

Item Name	Description	Byte	Format
DVNAME	Data Value Name	40	20

* DV Naming Rule should be unified.

* Items supplied by equipment vendor should be within 40 bytes and sufficiently meaningful (Same parameters will appear when items are shortened a lot).

Where Used: S6F3

Item Name	Description	Byte	Format
EAC	Equipment acknowledge code	1	20

0: Accept

1: Denied. At least one constant does not exist

- 2: Denied. Busy
 3: Denied. At least one constant out of range
 4: Other equipment-specific error

Where Used: S2F108

Item Name	Description	Byte	Format
ECACK	Empty cassette Permission Acknowledge	1	20
0: Execute the permission to Grant 1: Execute the permission to Cancel 2: Invalid CSTID 3: Invalid PTID			
<u>Where Used:</u> S2F106			

Item Name	Description	Byte	Format
ECID	Equipment Constant ID	4	20
Refer to [Appendix A] Equipment Constant List.			
<u>Where Used:</u> S2F13, S2F29, S6F11			

Item Name	Description	Byte	Format
ECMAX	Equipment constant maximum value	10	20
Refer to [Appendix A] Equipment Constant List.			
<u>Where Used:</u> S2F30			

Item Name	Description	Byte	Format
ECMIN	Equipment constant minimum value	10	20
Refer to [Appendix A] Equipment Constant List.			
<u>Where Used:</u> S2F30			

Item Name	Description	Byte	Format
ECNAME	Equipment constant name	40	20
Refer to [Appendix A] Equipment Constant List.			
<u>Where Used:</u> S2F30			

Item Name	Description	Byte	Format
ECV	Equipment Constant Value	10	20
Refer to [Appendix A] Equipment Constant List.			
<u>Where Used:</u> S2F15, S6F11			

Item Name	Description	Byte	Format
EDID	Expected Data Identification	6	20
Fill this item with port ID which conversation timeout occurs.			
Example → ‘P01’, ‘P02’...			
Where Used: S9F13			

Item Name	Description	Byte	Format
EMPTYCSTPMS	Empty Cassette Permission	1	20
-G: Grant /* Grant to loaded CST */ -C: Cancel /* Not Grant to loaded CST */			
Where Used: S2F107			

Item Name	Description	Byte	Format
EQST	Equipment Status	1	20
I: IDLE, R: RUN, D: DOWN, M: MAINT. P: PAUSE			
Where Used: S1F6, S6F11			

Item Name	Description	Byte	Format
EQSTCODE	Equipment Status Reason Code	4	20
EQST : MAINT			
1000 : PM_TBM, CBM (Regular)			
1001 : PM_NSP (Non-regular)			
1002 : Recovery from BM			
1100 : Unit Test			
1200 : Process condition change			
1201 : Process Test			
1300 : Tool change			
1301 : Tool adjustment			
1400 : Utility adjustment			
1500 : Operator decision			
1600 : Software update			
1900 : Others			
EQST : DOWN			
2000 : Emergency Stop			

2100 : Caused by its own unit down
2101 : Caused by one of its own subunit down
2102 : Caused by one of its own subsub-unit down
2103 : Glass broken detected
2104 : VCR Reading error
2105 : Other device error
2121 : Caused by its own upstream or downstream unit - H/W Interface problem
2122 : Caused by its own upstream or downstream unit Link signal time out
2123 : Caused by its own upstream or downstream unit PIO safety signal
2124 : Caused by its own upstream or downstream unit Loading stop
2130 : Caused by Host No response for important request
2131 : Caused by Host command(SPC Interlock)
2132 : Caused by Host command(RMS parameter check NG)
2133 : Caused by Host command(Others)
2200 : Critical process failure detected
2201 : Continuous critical NG detected in inspection unit
2300 : Invalid Material loaded by MGV
2301 : Material broken detected
2302 : Tool use count expired
2303 : Material use count expired
2400 : Utility problem
2500 : Operator decision
2900 : Others

EQST : PAUSE
3300 : Material change
3500 : Operator decision

EQST : IDLE
4000 : No CST to process
4001 : Waiting for CST unloaded
4002 : No Glass to process
4003 : Waiting for Glass transferred
4300 : No Support Tool
4301 : No Material
4500 : No Operator

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
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ERACK	Enable/Disable Event Report Acknowledge	1	20
0: Accepted, 1: Denied. At least one CEID does not exist, 2: Other Errors.			
Where Used: S2F38			

Item Name	Description	Byte	Format
EVASAMPLFLAG	Evaporation sample flag	1	20
Evaporation EQ sample flag Operation select			
U: VAS unit -> unload			
B: NG buffer unload			
Where Used: S6F103			

Item Name	Description	Byte	Format
EXPRCPID	Exposure processed Recipe ID	30	20
For Exposure and Total Pitch feedback. Only used in Total Pitch			
Where Used: S2F103			

Item Name	Description	Byte	Format
EXPUNITID	Exposure Unit ID	20	20
For Exposure and Total Pitch feedback. Only used in Total Pitch			
Where Used: S2F103			

Item Name	Description	Byte	Format
FSLOTNO	From Slot Number	3	20
FSLOTNO is the slot number of cassette which any glass or panel was located before start of processing.			
We will use '001','002','003','015','020'...etc			
Where Used: S2F105, S6F11			

Item Name	Description	Byte	Format
FSLOTPOSITION	From Slot Position	1	20
FSLOTPOSITION is the slot position of cassette which any glass or panel was located before start of processing.			
F: Front			
B: Back			
Only Half Cassette use			
Where Used: S2F105, S6F11			

Item Name	Description	Byte	Format

GCFLAG	Evaporation EQ Good Check flag	1	20
Q-Cell Test flag			
G: Test skip flag			
C: Test flag			
Where Used: S6F103			

Item Name	Description	Byte	Format
GCUNIT	Evaporation EQ GCFLAG Unit	6	20
GC flag Unit list			
O: CG flag OFF			
X: CG flag ON			
Where Used: S6F103			

Item Name	Description	Byte	Format
GLSGRADE	Glass Grade	1	20
EQP give this value to each glass.			
Ex) A: A grade			
Ex) B: B grade			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
GLSID	Glass ID	20	20
All types of Glass ID should be record to this item.			
Before Cut: Glass ID			
Post Cut: Q-glass ID			
Where Used: S1F6, S2F103, S2F105, S5F1, S6F103			

Item Name	Description	Byte	Format
GLSIDTYPE	Glass-ID Type	1	20
The type of the Glass			
G: Glass			
Q: Q-Glass			
P: Panel or Cell			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
GLSJUDGE	Glass Judge	1	20
- Comes from AOI automatically or operators after the other inspections.			

- Glass judge is independent parameter which means panel judge doesn't impact glass judge.

G: Good,

N: Not Good,

R: Rework,

P: RePair,

S: Scrap.

F: Fault

V: Virtual

I: Inspection

* Special case:

Where Used: S2F103, S6F11, S6F103

Item Name	Description	Byte	Format
GLSSIZE	Size of Glass	1	20

Ex) A: 1500 X 1800
B: 1500 X 1850

Where Used: S2F103, S6F11, S6F103

Item Name	Description	Byte	Format
GLSST	Glass/Panel Status	2	20

00: Empty (no exist)

01: Wait for Command (Recipe) (wait for MES download information(Remote) or user selected(Local))

02: Wait for Process(Start) (wait for process start)

03: Processing (glass processing)

04: Process **Normal** End

05: Process **Abort** End (Wait for Process -> "Abort" command -> glass no process)

06: Process **Light Alarm** End (Glass Unit IN -> Light Alarm Set -> Light Alarm Reset -> Normal Process End -> index IN)

07: Process **Heavy Alarm** End (Glass Unit IN -> Heavy Alarm Set -> Heavy Alarm Reset -> Normal Process End -> index IN)

08: Process **Both Alarm** End (Glass Unit IN -> Light Alarm Set -> Light Alarm Reset -> Heavy Alarm Set -> Heavy Alarm Reset -> Normal Process End -> index IN)

09: Process **Fail** End (Glass Unit IN -> Alarm Set -> Index IN or Glass Unit IN -> process start -> process stop -> cassette insert) (not process end case)

10: Skip (Does not selected by host when received S2F103 message) (glass exist, wait for MES command Skip(Remote) or user not-selected(Local))

Ex 6slot) "011111" -> Command download -> "022228" -> first glass start -> "031118" -> first glass end -> "041118" -> 2st glass start -> "043118" -> Abort command -> 2st glass not process end cassette insert -> "047558"

(2st glass process end cassette insert -> “044558”)

Where Used: S6F103

Item Name	Description	Byte	Format
GLSTHK	Thickness	5	20

-Glass Thickness information

Where Used: S2F103, S6F103, S6F11

Item Name	Description	Byte	Format
GLSTYPE	Glass Type	1	20

The type of the Glass

- L : LTPS,
E : Encap,
O : OLED,
N : Normal Dummy,
B : Bare Dummy,
T : Tooling Dummy
S : Offset Dummy
P : PI Dummy
K : Key Dummy
C : TFE CVD Dummy
J : TFE Inkjet Dummy
M : Manual Dummy
I : ITO Dummy
Z : IGZO Dummy

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
HCACK	Host Command Ack. Code	1	20

- 0: OK,
1: PTID is invalid,
2: CSTID is invalid,
3: LOTID is invalid,
4: Command does not exist,
5: Rejected, Already in Desired Condition,
6: Other Errors.
7: Already ReCycle. (RCMD=9 Recycle command only)

Where Used: S2F42

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Item Name	Description	Byte	Format
HGLSID	Host GlassID	20	20
Glass ID from Host send Cassette Information Download message.			
Where Used: S6F3, S6F11			

Item Name	Description	Byte	Format
HOSTMSG	Host Message	20	20
MES or EAP message. It expresses in English text message.			
<u>Where Used:</u> S2F109			

Item Name	Description	Byte	Format
HSLOTINFO	Half Slot Information	52	20

Half Cassette only

2byte 1Slot. The first byte is FRONT, second byte is BACK

0: Empty

1: Wait for Command (Recipe)

2: Wait for Process(Start)

3: Processing

4: Process Normal End

5: Process Abort End

6: Process **Alarm End** (Glass Unit IN ->Alarm Set -> Alarm Reset -> Normal Process End -> index IN)

7: Process Fail End (Glass Unit IN ->Alarm Set ->Index IN)

8: Skip (Does not select by host when received S2F103 message)

Remark:

01~05: Normal End

06~10: Skip

11 ~ 15: Abort

16~26: Empty

Where Used: S1F6

Item Name	Description	Byte	Format
HSLOTMAP	Half Slot Map info.	52	20
Existence of the Glass at the slot.			
Half Cassette only			
2byte 1Slot. The first byte is FRONT, second byte is BACK			

* HSLOTMAP =

'OOOOXOOOOXOOOOOOOOOOOOXXXXOOOOXOOOOXOOOOOOOOOOOOXXXX'

→ The meaning of 'O' is 'Existence' and 'X' is 'Not Existence'.

Where Used: S6F11, S6F103

Item Name	Description	Byte	Format
ICSTID	Input Cassette ID	20	20
Loader CST ID			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
IPTID	Input Port ID	3	20
Loader Port ID			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
LCTIME	Last Change Time	14	20
LCTIME FORMATE ='YYYYMMDDhhmmss'			
YYYY=Year 0000 to 9999			
MM=Month 01 to 12			
DD=Day 01 to 31			
hh=Hour 00 to 23			
mm=Minute 00 to 59			
ss=Second 00 to 59			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
LCVDREPAIRTYPE	Array cut repair type	800	20
All panels of a glass had been processed CUT Repair or not.			
* Format: LCVDREPAIRTYPES = "XXAXXAAXXXXAXA..."			
X: A panel of glass had not been processed Array CUT Repair.			
A: A panel of glass had been processed Array CUT Repair.			
<u>Where Used:</u> S2F103, S6F103			

Item Name	Description	Byte	Format
LOTID	Lot Identification or Lot Number	20	20

LOTID generated by Host system. And gives LOTID value to EQP when host sends S2F103 message.

Where Used: S1F6, S2F41, S2F103, S5F1, S6F11, S6F103

Item Name	Description	Byte	Format
LOTJUDGE	Lot Judge	1	20
- Host makes this value and send to EQP through S2F103 message.			
- The EQP send same value when report S6F103.			
G: Good			
N: Not Good			
R: Rework			
P: RePair			
H: Hold			
V: Virtual			
I: Inspection			
<u>Where Used:</u> S2F103, S6F103			

Item Name	Description	Byte	Format
LSST	Loading Stop Status	1	20
Loading Stop Status			
1: Request			
2: Release			
<u>Where Used:</u> S2F401			

Item Name	Description	Byte	Format
LSCODE	Loading Stop Reason Code	1	20
Loading Stop Reason Code			
1: Status (BM or Run)			
2: Engineer (Stop or Start)			
3: Downstream (Dead-Lock or Recovery)			
4~: Reserved			
<u>Where Used:</u> S2F401			

Item Name	Description	Byte	Format
MAKER	Maker information of Crate	20	20
Unpacking EQP only			
Where Used: S2F103, S6F11, S6F103			

Item Name	Description	Byte	Format
MASKAMHSZONE	Mask AMHS zone	10	20
To indicate Mask location in AMHS.			
OK: OK zone			
NG: NG zone			
RW: Rework Zone			
Where Used: S6F11			

Item Name	Description	Byte	Format
MASKAOISTATE	Mask AOI state	10	20
Mask AOI state			
R: Repair			
G: Good			
Where Used: S6F11			

Item Name	Description	Byte	Format
MASKCLNSTATE	Mask Clean state	10	20
Mask Cleaner state			
N: Not Good			
G: Good			
Where Used: S6F11			

Item Name	Description	Byte	Format
MASKCSTTYPE	Mask CST type	10	20
Mask CST type			
P: Evaporation Process Cassette			
R: Rework Cassette			
Where Used: S2F109			

Item Name	Description	Byte	Format
MASKGROUPNAME	Mask group name	30	20
Mask group name			
Where Used: S1F6, S2F109, S6F11, S6F3			

Item Name	Description	Byte	Format
MASKID	Mask ID	30	20

Mask id

Where Used: S1F6, S2F109, S6F11, S6F3

Item Name	Description	Byte	Format
MASKINSPSTATE	Mask INSP state	10	20

Mask INSP state

N: Not Good

G: Good

Where Used: S6F11

Item Name	Description	Byte	Format
MASKINSUNITID	Mask input Sub-Unit ID	20	20

Evaporation

Where Used: S2F109

Item Name	Description	Byte	Format
MASKJUDGE	Mask Judge	1	20

G: Good

N: NG

R: Rework

P: Repair

S: Scrap

Where Used: S2F109

Item Name	Description	Byte	Format
MASKMAGNET	Mask Magnet	10	20

Where Used: S2F109, S6F11, S6F109

Item Name	Description	Byte	Format
MASKMAXCNT	Mask Maximum usable count	5	20

Mask maximum usable count

Where Used: S2F109

Item Name	Description	Byte	Format

MASKMODELNO	Mask Model No	2	20
Mask model number			
Where Used: S2F109			

Item Name	Description	Byte	Format
MASKNGCODE	Mask NG code	10	20
Mask NG code			
1: Clean NG 2: AOI NG 3: INSP NG 4: Q-time NG			
Where Used: S6F11			

Item Name	Description	Byte	Format
MASKREPAIRCNT	Mask Repair Count	10	20
Mask Repair Count			
Ex) 1			
Where Used: S6F11			

Item Name	Description	Byte	Format
MASKST / SUNITMASKST	Mask Status	2	20
<Evaporation>			
01: Evaporation Unit In: Evaporation Sub-Unit Stage In			
02: Mask Cassette In: Mask Cassette In			
<Mask AMHS>			
10: Clean Unit In			
11: Clean Out Stage			
12: AMHS Robot			
13: AOI unit in			
14: Repair unit in			
15: Inspection unit in			
16: Mask Store OK zone			
17: Mask Store NG zone			
18: Mask Store Rework zone			
30: Oven unit in (1CTJ01 equipment unit)			
31: Clean sub unit in (1CTJ01 equipment unit)			

<Other Equipment> (1CEPxx,)

20: in use (Mask not exist, do not report)

21: waiting (Mask not exist, do not report)

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
MASKTHICKNESS	Mask THICKNESS	5	20

Where Used: S2F109

Item Name	Description	Byte	Format
MASKTYPE	Mask TYPE	10	20
Ex) FMM, CMM			
<u>Where Used: S2F109</u>			

Item Name	Description	Byte	Format
MASKSPEC	Mask product spec	30	20

Where Used: S2F109, S6F109

Item Name	Description	Byte	Format
MASKUSECNT	Mask Used Count	5	20
Mask Used Count			
<u>Where Used: S1F6, S2F109, S6F11, S6F109</u>			

Item Name	Description	Byte	Format
MATERIALID	Material ID	30	20

Material Identification.

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
MATERIALST	Material Change Status	1	20

1: Un-Mount (Material used-up or Host send disagree to add PR)

2: Mount (Report a PR ID to Host and wait for Permission)

3: In-use (Agree to add PR)

4: Stand-by

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
MATERIALTYPE	Material Type	30	20
MASK : Normal Mask			
FMM_MASK : AOI&Repair Mask			
CMM_MASK : AOI&Repair Mask			
ORGANIC_MASK : Mask Cleaner Mask			
LIF_AL_MASK : Mask Cleaner Mask			
AG_MG_YB_MASK : Mask Cleaner Mask			
FRAME : Mask Tension Mask			
FINE_MASK : Mask Tension Mask(Sheet Mask)			
TEG : Mask Tension Mask(Support Mask(Cover, Hauling), Dummy)			
<u>Where Used:</u> S1F6, S6F11			

Item Name	Description	Byte	Format
MATERIALUSED_CNT	Material used count	10	20
Material used count			
<u>Where Used:</u> S1F6, S6F11			

Item Name	Description	Byte	Format
MCACK	Mask information download Ack	1	20
0: Accepted, 1: Busy, 2: CSTID is Invalid, 3: PPID is Invalid, 4: SLOT Information mismatch, 9: Other Errors.			
<u>Where Used:</u> S2F110			

Item Name	Description	Byte	Format
MDLN	Equipment Model Type	6	20
Same data as returned by S1F2.			
<u>Where Used:</u> S1F2, S1F13, S7F26			

Item Name	Description	Byte	Format
MESSAGE	Message	80	20
In specific situation, Host of EQP can contain English text message in this item.			

Where Used: S2F41, S6F11

Item Name	Description	Byte	Format
MEXP	Message Expected SxFyyy or SxxFy	6	20

This item used couldn't receive Lot information or Host command in limit time.

Message expected in the form SxFyyy or SxxFy where x is stream and y is function.

Ex) S2F41, S2F103

Where Used: S9F13

Item Name	Description	Byte	Format
MHEAD	SECS message block header associated with message block in error	10	10

Where Used: S9F1, S9F3, S9F5, S9F7, S9F11

Item Name	Description	Byte	Format
MUPACK	Mask and Material Usage Permission Acknowledge	1	20

0: Execute the Permission to Grant
1: Execute the Permission to Cancel

Where Used: S2F110

Item Name	Description	Byte	Format
OCSTID	Output Cassette ID	20	20

Destination Cassette ID. It reported in Glass In By Indexer (port) CEID=322

Where Used: S6F11

Item Name	Description	Byte	Format
OFFSETCALCT	Mask Calculation OFFSET Theta	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETCALCX	Mask Calculation OFFSET X	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETCALCY	Mask Calculation OFFSET Y	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETREFT	Mask Reference OFFSET Theta	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETREFX	Mask Reference OFFSET X	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETREFY	Mask Reference OFFSET Y	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETT	Mask OFFSET T	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETX	Mask OFFSET X	10	20

Where Used: S2F109

Item Name	Description	Byte	Format
OFFSETY	Mask OFFSET Y	10	20

Where Used: S2F109

Item Name	Description	Byte	Format

OFLACK	OFF-LINE Acknowledge Code	1	20
0: Accepted, 1: Not Accepted			
Where Used: S1F16			

Item Name	Description	Byte	Format
ONLACK	ON-LINE Acknowledge	1	20
0: Accepted, 1: Not Accepted, 2: Already ON-LINE LOCAL, 3: Already ON-LINE REMOTE.			
Where Used: S1F18			

Item Name	Description	Byte	Format
OPERID	Process Step Name	20	20
To manage Process step for Host system. That value makes by Host.			
Where Used: S2F103, S6F3, S6F103			

Item Name	Description	Byte	Format
OPERMODE	Operation Mode	2	20
Some EQP has variable operation mode code as assigned in constant. Whenever EQP change operation mode, it should report to Host. Ex) 01 or 02 or 03 or 04 ...			
Where Used: S1F6, S6F11			

Item Name	Description	Byte	Format
OPERMODEDESC	Operation Mode Description	40	20
Description of Operation Mode (Ex) 01: All processing mode 02: CVD only 03: Docking cleaner only			
Where Used: S1F6, S6F11			

Item Name	Description	Byte	Format
OPTID	Output Port ID	3	20
CEID = 321, 323, 324, 325, 326: OPTID = Empty			
CEID = 322: OPTID = Unloading PTID			
Where Used: S6F11			

Item Name	Description	Byte	Format
PAIRCSTID	Pair Cassette ID	20	20
Pair CST ID means Encap Cassette ID.			
This value use evaporation EQP only.			
Where Used: S6F11			

Item Name	Description	Byte	Format
PAIRGLSGRADE	Pair Glass Grade	1	20
Used in Evaporation EQP.			
This value should be fill touch film grade.			
Where Used: S2F103, S6S11, S6F103			

Item Name	Description	Byte	Format
PAIRGLSID	Pair GlassID	20	20
Used in Evaporation EQP.			
This value should be fill touch film ID.			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
PAIRGLSJUDGE	Pair Glass Judges	1	20
Used in Evaporation EQP.			
This value should be fill touch film judge.			
Where Used: S2F103, S6F11, S6F103			

Item Name	Description	Byte	Format
PAIRLOTID	Pair Lot Identification	20	20
Encap LOTID			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
PAIRPRODID	Pair Product SpecID	20	20
Pair Product Spec ID			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
PAIRPRODTYPE	Pair Product Type	20	20
It distinguishes between Engineering Lot, Test Lot etc.			

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
PAIRRGLSID	Pair Read Glass ID	20	20
Encap Glass ID Read by VCR			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
PAIRSLOTNO	Pair Glass Slot Number	2	20
Pair Glass Slot Number			
<u>Where Used:</u> S6F11			

Item Name	Description	Byte	Format
PANELJUDGE	Sheet in Panel judge list	800	20
Panel judge code list			
Ex) GGNNGGGRPGGGG.....			
<u>Where Used:</u> S6F103			

Item Name	Description	Byte	Format
PERMISSION	HOST Permission message	1	20
When an Empty CST coming unloader port, the host judge and send permission.			
- 0: Available			
- 1: Not Available			
<u>Where Used:</u> S2F105			

Item Name	Description	Byte	Format
PPARMNAME	Process Parameter Name	40	20
Recipe item name			
<u>Where Used:</u> S7F26			

Item Name	Description	Byte	Format
PPARMVALUE	Process Parameter Value	40	20
Recipe value			
<u>Where Used:</u> S7F26			

Item Name	Description	Byte	Format
PPCINFO	Process Program Change Information	1	20
1: Created (a new PPID is created and registered),			

- 2:** Modified (some parameters of a PPID are modified),
3: Deleted (any PPID is deleted),
4: Changed (equipment sets up any PPID which different from current PPID).

Where Used: S6F11

Item Name	Description	Byte	Format
PPID	Process Program ID or Recipe ID	40	20
Process Program ID			
Where Used: S1F6, S2F103, S6F3, S6F11, S6F103, S7F20, S7F25, S7F26			

Item Name	Description	Byte	Format
PPTYPE	Process Program Type	1	20
E: Equipment, U: Unit, S: SubUnit			
Where Used: S6F11, S7F19, S7F26			

Item Name	Description	Byte	Format
PROBERID	Prober ID	20	20
※ Test equipment prober ID			
Where Used: S1F6, S2F103, S6F11, S6F3			

Item Name	Description	Byte	Format
PRODID	Product Spec ID	20	20
Use to value from the host information.			
Where Used: S2F103, S6F3, S6F33, S6F103			

Item Name	Description	Byte	Format
PTID	Port Identification or Port Number	3	20
We use 'P01','P02','P03' (from left side when we see at front it).			
Where Used: S1F6, S2F41, S2F103, S2F105, S2F130, S6F11, S6F103			

Item Name	Description	Byte	Format
PTST	Port Status	1	20
0: Load Request, 1: Pre-Load Complete, 2: Load Complete, 3: Unload Request, 4: Unload Complete, 5: Disable			

Where Used: S1F6

Item Name	Description	Byte	Format
PTTYPE	Port Type	2	20
PB: Both Port(Load/Unload), PL: Load Port, PU: Unload Port, PS: Sorter Port			
Some values of PTTYPE could be add or change.			
<u>Where Used:</u> S1F6, S6F11			

Item Name	Description	Byte	Format
PTUSETYPE	PORt USE TYPE	2	20
OO: Normal using type, DM: Dummy, GG: Good, NG: Not Good, RW: ReWork, RP: RePair, SC: Scrap. MS: Mask EN: Encap CR: Crate Port type Loader CL: cassette cleaner type loader and Unloader MX: Good and Not Good mix port Type (only Port Unload Type)			
Some values of PTUSETYPE could be add or change.			
<u>Where Used:</u> S1F6, S2F103, S6F11, S6F103			

Item Name	Description	Byte	Format
QGLSJUDGE LIST	Sheet in Q-glass judge list	10	20
Judge List Ex) GRGN....			
<u>Where Used:</u> S6F103			

Item Name	Description	Byte	Format
QTY	Quantity	3	20
The quantity of glass or cell quantity in cassette or tray.			
<u>Where Used:</u> S2F41, S2F103, S6F103, S6F203			

Item Name	Description	Byte	Format
RCMD	Remote command code or string	1	20
1: START			
2: CANCEL			
3: ABORT			
4: PAUSE			
5: RESUME			
6: OPERATOR CALL			
7: Mask CST CANCEL			
8: Un-packer Bar Code Data (crate-id) result			
9: ReCycle mode “ON” command			
Where Used: S2F41			

Item Name	Description	Byte	Format
RCPSTEP	Recipe Step	20	20
Recipe step			
Where Used: S7F25, S7F26			

Item Name	Description	Byte	Format
RECYCLEST	Re-Cycle Status	1	20
0: Recycle mode Off (Normal mode)			
1: Recycle mode On			
Where Used: S1F6, S6F11			

Item Name	Description	Byte	Format
REPGSZ	Reporting Group Size	3	20
(Ex)			
DSPER = 3 Seconds, REPGSZ = 1: Report S6F1 (1 group) every 3 seconds.			
DSPER = 3 Seconds, REPGSZ = 2: Report S6F1 (2 group) every 6 seconds.			
Where Used: S2F23			

Item Name	Description	Byte	Format
RGLSID	Read Glass ID	20	20
Glass ID Read by VCR			
Where Used: S6F3, S6F11, S6F103			

Item Name	Description	Byte	Format
RPTID	Report ID	3	20

Identifier of a defined report to distinguish.

EX) 100, 200, 300, 400, 500, ...

Where Used: S6F11

Item Name	Description	Byte	Format
RWKCNT	Rework Count	1	20
Rework Count.			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
SCACK	Sorter Job Command Ack	1	20
0: Accepted			
1: Busy			
2: Some of CSTID is Invalid			
3: Already Received (Sorter Job ID)			
4: SLOT Information mismatch			
5: Not yet prepared for this sorter job. (ex. Unload port is empty or Loader Port is empty)			
Where Used: S2F108			

Item Name	Description	Byte	Format
SCRAPCODE	Scrap Code	5	20
Scrap Code			
BK : Breakage			
LY : Low Production Rate			
EP : Process Sampling			
IP : Process Error Scrap			
MQ : Mqc Glass Scrap			
DM : Dummy Glass Scrap			
BS : Input Error Scrap			
OT : ETC			
Where Used: S6F11			

Item Name	Description	Byte	Format
SFCD	Status Formatted Code	2	20
01: Equipment Status Request,			
02: Port Status Request			
03: Operation mode Request			
04: Unit Status Request			

- 05:** Sub-Unit Status Request
06: Mask Status Request
07: Material Status Request
08: Sorter Job List Request
09: Crate Port Status Request
10: Port load-request and Unloader-request report start
11: Equipment Recycle Status Request

Where Used: S1F5, S1F6

Item Name	Description	Byte	Format
SHEAD	Stored header related to the transaction timer	10	10
Stored header related to the transaction timer.			
Where Used: S9F9			

Item Name	Description	Byte	Format
SHELFNO	AMHS EQ shelf slot number	5	20
AMHS EQ shelf slot number			
Where Used: S6F11			

Item Name	Description	Byte	Format
SITENAME	Measurement Site Name of Glass (or Panel)	40	20
If equipment measures more than two sites (or points) per one DV, equipment should report process data with SITENAME. One site default value='G'			
Where Used: S6F3			

Item Name	Description	Byte	Format
SLOTINFO	Slot Information	26	20
0: Empty			
1: Wait for Command (Recipe)			
2: Wait for Process(Start)			
3: Processing			
4: Process Normal End			
5: Process Abort End			
6: Process Alarm End (Glass Unit IN ->Alarm Set -> Alarm Reset -> Normal Process End -> index IN)			
7: Process Fail End (Glass Unit IN ->Alarm Set ->Index IN)			
8: Skip (Does not selected by host when received S2F103 message)			
Remark:			

(EX) "4444488885555000000000000"

01~05: Normal End

06~10: Skip

11 ~ 15: Abort

16~26: Empty

Where Used: S1F6

Item Name	Description	Byte	Format
SLOTMAP	Slot Map info.	26	20

Existence of the Glass at the slot.

* SLOTMAP = 'OOXOOOOXOOOOOOOOOOOOXXXOO'

→ The meaning of 'O' is 'Existence' and 'X' is 'Not Existence'.

Where Used: S6F11

Item Name	Description	Byte	Format
SLOTNO	Slot Identification or Slot Index	3	20

We will use '001', '002', '003', '015', '020'...etc. (from bottom side when we see at front Slot and from left side when we see at front CST).

Where Used: S1F6, S2F103, S6F11, S6F103, S2F109

Item Name	Description	Byte	Format
SLOTPOSITION	Slot Position	1	20

SLOTPOSITION is the slot position of half cassette

F: Front

B: Back

Only Half Cassette use

Where Used: S2F103, S6F11, S6F13

Item Name	Description	Byte	Format
SLOTSEL	Slot Select. will be Processed	26	20

* SLOT = 'OOOOXXXXXXXXXXXXXX'

→ The mean of 'O' is 'selected' and 'X' is 'deselected'.

Where Used: S2F103

Item Name	Description	Byte	Format
HSLOTSEL	Half Slot Select. will be Processed	52	20

* SLOT = 'OOOOXXXXXXXXXXXXXXOOOOXXXXXXXXXXXXXX'

→ The mean of 'O' is 'selected' and 'X' is 'deselected'.

Where Used: S2F103

Item Name	Description	Byte	Format
SMPLFLAG	Sample Flag	1	20

Y: Selected,

N: Not Selected.

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
SMPLN	Sample Number,	5	20

The order number of trace data.

SMPLN will be increased sequentially.

Where Used: S6F1

Item Name	Description	Byte	Format
SOFTREV	Software revision code	6	20

Software revision code 6 bytes maximum.

Where Used: S1F2, S1F13, S7F1, S7F26

Item Name	Description	Byte	Format
SORTERJOBID	Sorter Job ID	20	20

Host can download SorterJobID for distinguish from other SorterJob.

Equipment must manage the SorterJobID and delete this at job end point.

Where Used: S2F105, S6F11

Item Name	Description	Byte	Format
SORTERJOBST	Sorter Job status	1	20

R: Running

W: Waiting

C: Cancelling

A: Aborting

Where Used: S1F6

Item Name	Description	Byte	Format
SORTSCRAPFLAG	Glass Scrap flag	1	20

Y: Glass in Scrap-Port

N: Not Scrap

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
SORTTURNFLAG	Glass turn flag	1	20

Y: Glass turn (180 rotation)

N: Not turn

Where Used: S2F103, S6F103

Item Name	Description	Byte	Format
SSLOTNO	Sub Unit Slot Number	2	20

Sub-Unit internal slot number.

(EX) 01, 02

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
SSSLOTNO	Sub Sub Unit Slot Number	2	20

Sub-Unit internal slot number.

(EX) 01, 02

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
STIME	Sample Time	14	20

STIME FORMAT = 'YYYYMMDDhhmmss'

YYYY=Year 0000 to 9999,

MM=Month 01 to 12,

DD=Day 01 to 31,

hh=Hour 00 to 23,

mm=Minute 00 to 59,

ss=Second 00 to 59.

Where Used: S6F1

Item Name	Description	Byte	Format
SUNITID	Sub-Unit Identification	20	20

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
SSUNITID	Sub-Sub-Unit Identification	20	20

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
SUNITMASKID	Sub-Unit Mask ID	30	20

mask-Id is contained in Sub-Unit

Where Used: S1F6

Item Name	Description	Byte	Format
SUNITMASKUSECNT	Sub-Unit Mask Used Count	5	20

Mask Used Count is contained in Sub-Unit

Where Used: S1F6

Item Name	Description	Byte	Format
SUNITST	Sub-Unit State	1	20

I: IDLE,

R: RUN,

D: DOWN,

M: MAINT.

P: PAUSE

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
SSUNITST	Sub-Sub-Unit State	1	20

I: IDLE,

R: RUN,

D: DOWN,

M: MAINT.

P: PAUSE

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
SUNITSTCODE	Sub-Unit Status Reason Code	4	20

EQST : RUN**0 : RUN****EQST : MAINT****1000 : PM_TBM, CBM (Regular)**

1001 : PM_NSP (Non-regular)**1002 : Recovery from BM****1100 : Unit Test****1200 : Process condition change****1201 : Process Test****1300 : Tool change****1301 : Tool adjustment****1400 : Utility adjustment****1500 : Operator decision****1600 : Software update****1900 : Others****EQST : DOWN****2000 : Emergency Stop****2100 : Caused by its own unit down****2101 : Caused by one of its own subunit down****2102 : Caused by one of its own subsub-unit down****2103 : Glass broken detected****2104 : VCR Reading error****2105 : Other device error****2121 : Caused by its own upstream or downstream unit - H/W Interface problem****2122 : Caused by its own upstream or downstream unit Link signal time out****2123 : Caused by its own upstream or downstream unit PIO safety signal****2124 : Caused by its own upstream or downstream unit Loading stop****2130 : Caused by Host No response for important request****2131 : Caused by Host command(SPC Interlock)****2132 : Caused by Host command(RMS parameter check NG)****2133 : Caused by Host command(Others)****2200 : Critical process failure detected****2201 : Continuous critical NG detected in inspection unit****2300 : Invalid Material loaded by MGV****2301 : Material broken detected****2302 : Tool use count expired****2303 : Material use count expired****2400 : Utility problem****2500 : Operator decision****2900 : Others****EQST : PAUSE**

3300 : Material change**3500 : Operator decision****EQST : IDLE****4000 : No CST to process****4001 : Waiting for CST unloaded****4002 : No Glass to process****4003 : Waiting for Glass transferred****4300 : No Support Tool****4301 : No Material****4500 : No Operator****Where Used: S1F6, S6F11**

Item Name	Description	Byte	Format
SSUNITSTCODE	Sub-Sub-Unit Status Reason Code	4	20

EQST : MAINT**1000 : PM_TBM, CBM (Regular)****1001 : PM_NSP (Non-regular)****1002 : Recovery from BM****1100 : Unit Test****1200 : Process condition change****1201 : Process Test****1300 : Tool change****1301 : Tool adjustment****1400 : Utility adjustment****1500 : Operator decision****1600 : Software update****1900 : Others****EQST : DOWN****2000 : Emergency Stop****2100 : Caused by its own unit down****2101 : Caused by one of its own subunit down****2102 : Caused by one of its own subsub-unit down****2103 : Glass broken detected****2104 : VCR Reading error****2105 : Other device error****2121 : Caused by its own upstream or downstream unit - H/W Interface problem****2122 : Caused by its own upstream or downstream unit Link signal time out**

2123 : Caused by its own upstream or downstream unit PIO safety signal**2124 : Caused by its own upstream or downstream unit Loading stop****2130 : Caused by Host No response for important request****2131 : Caused by Host command(SPC Interlock)****2132 : Caused by Host command(RMS parameter check NG)****2133 : Caused by Host command(Others)****2200 : Critical process failure detected****2201 : Continuous critical NG detected in inspection unit****2300 : Invalid Material loaded by MGV****2301 : Material broken detected****2302 : Tool use count expired****2303 : Material use count expired****2400 : Utility problem****2500 : Operator decision****2900 : Others****EQST : PAUSE****3300 : Material change****3500 : Operator decision****EQST : IDLE****4000 : No CST to process****4001 : Waiting for CST unloaded****4002 : No Glass to process****4003 : Waiting for Glass transferred****4300 : No Support Tool****4301 : No Material****4500 : No Operator****Where Used: S1F6, S6F11**

Item Name	Description	Byte	Format
SV	Status Variable Value	40	20

Status variable value.

Where Used: S1F4, S6F1

Item Name	Description	Byte	Format
SVID	Status Variable ID	5	20

Status variables may include any parameter that can be sampled in time such as temperature or quantity of a consumable.

Where Used: S1F3, S2F23, S6F1

Item Name	Description	Byte	Format
SVNAME	Status Variable Name	40	20

Where Used: S1F12

Item Name	Description	Byte	Format
TCSTID	Target (Destination)Cassette ID	20	20

Where Used: S2F105

Item Name	Description	Byte	Format
TEXT	TEXT	120	20

A single line of characters.

Where Used: S10F1, S10F5

Item Name	Description	Byte	Format
TIAACK	Equipment acknowledgement code	1	20

0: Everything correct,
1: Too many SVIDs,
2: No more traces allowed,
3: Invalid period,
4: Equipment-specified error.

Where Used: S2F24

Item Name	Description	Byte	Format
TIACK	Time acknowledgement code	1	20

0: Accepted,
1: Error not done.

Where Used: S2F32

Item Name	Description	Byte	Format
TID	Terminal number	2	20

0: Single or main terminal,
>0: Additional terminals at the same equipment.

Where Used: S10F1, S10F5

Item Name	Description	Byte	Format
TIME	TIME	14	20

TIME FORMAT: 'YYYYMMDDhhmmss'

YYYY=Year 0000 to 9999

MM=Month 01 to 12

DD=Day 01 to 31

hh=Hour 00 to 23

mm=Minute 00 to 59

ss=Second 00 to 59

Where Used: S2F18, S2F31, S6F11

Item Name	Description	Byte	Format
TOTSMP	Total Samples to be made	5	20

The maximum number of samples that this Trace Report will perform.
-1 means infinite count.

Where Used: S2F23

Item Name	Description	Byte	Format
TPTID	Destination Port Identification	10	20

We use Port ID: BM1-LUD-01, BM1-LUD-02... (From left side when we see at front it).

Where Used: S2F105

Item Name	Description	Byte	Format
TRAYID	Tray Identification or Tray Number	20	20

Formal TRAYID

Where Used: S2F103, S6F11

Item Name	Description	Byte	Format
TRID	Trace Data ID	2	20

Identifier of a specific Trace Report.

Where Used: S2F23, S6F1

Item Name	Description	Byte	Format
TRSMODE	Transfer Mode	1	20

1: AUTO (AGV or STK),
2: Manual(MGV).

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
TSLOTNO	To Slot Number	3	20

TSLOTNO is the slot number of cassette which any glass or panel will be inserted after end of processing.

The format of value is same as 'SLOTNO'.

We will use '001','002','003','015','020'...etc.

CEID = 321, 323, 324, 325, 341, 343, 344: TSLOTNO = Empty

CEID = 322, 342: TSLOTNO = Unloading SLOTNO

Where Used: S2F105, S6F11

Item Name	Description	Byte	Format
TSLOTPOSITION	To Slot Position	1	20

TSLOTPOSITION is the slot position of cassette which any glass or panel will be inserted after end of processing.

F: Front

B: Back

Only Half Cassette use

Where Used: S2F105, S6F11

Item Name	Description	Byte	Format
UNITID	Unit Identification	20	20

If equipment is managed by units, each unit has an identifier.

But if equipment is not managed by units, UNITID would be empty.

Where Used: S1F6, S2F109, S5F1, S5F3, S6F3, S6F11

Item Name	Description	Byte	Format
UNITST	Unit State	1	20

I: IDLE,

R: RUN,

D: DOWN,

M: MAINT.

P: PAUSE

Where Used: S1F6, S6F11

Item Name	Description	Byte	Format
UNITSTCODE	Unit Status Reason Code	4	20
EQST : MAINT			
1000 : PM_TBM, CBM (Regular)			

1001 : PM_NSP (Non-regular)**1002 : Recovery from BM****1100 : Unit Test****1200 : Process condition change****1201 : Process Test****1300 : Tool change****1301 : Tool adjustment****1400 : Utility adjustment****1500 : Operator decision****1600 : Software update****1900 : Others****EQST : DOWN****2000 : Emergency Stop****2100 : Caused by its own unit down****2101 : Caused by one of its own subunit down****2102 : Caused by one of its own subsub-unit down****2103 : Glass broken detected****2104 : VCR Reading error****2105 : Other device error****2121 : Caused by its own upstream or downstream unit - H/W Interface problem****2122 : Caused by its own upstream or downstream unit Link signal time out****2123 : Caused by its own upstream or downstream unit PIO safety signal****2124 : Caused by its own upstream or downstream unit Loading stop****2130 : Caused by Host No response for important request****2131 : Caused by Host command(SPC Interlock)****2132 : Caused by Host command(RMS parameter check NG)****2133 : Caused by Host command(Others)****2200 : Critical process failure detected****2201 : Continuous critical NG detected in inspection unit****2300 : Invalid Material loaded by MGV****2301 : Material broken detected****2302 : Tool use count expired****2303 : Material use count expired****2400 : Utility problem****2500 : Operator decision****2900 : Others****EQST : PAUSE**

3300 : Material change**3500 : Operator decision****EQST : IDLE****4000 : No CST to process****4001 : Waiting for CST unloaded****4002 : No Glass to process****4003 : Waiting for Glass transferred****4300 : No Support Tool****4301 : No Material****4500 : No Operator****Where Used:** S1F6, S6F11

Item Name	Description	Byte	Format
USLOTNO	Unit Slot Number	4	20
Unit internal slot number. (EX) 0001, 0002			
Where Used: S1F6, S6F11			

Item Name	Description	Byte	Format
VCRSTATUS	VCR ON/OFF STATUS	30	20
0: VCR OFF 1: VCR ON			
Where Used: S6F11			

Item Name	Description	Byte	Format
WORKORDER	Work Order	30	20
Work Order			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
WORESULT	Work Order Result	1	20
0: OK 1: NG			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
WORESULTDESC	Work Order Result Description	30	20
Description of Work Order Result			
Where Used: S2F103, S6F103			

Item Name	Description	Byte	Format
PROCESSINGFLAG	Every Unit could be assigned one or more processing flag bits and should set this flag bit value as '1' after its own process. All units should not change other unit's value but reading is allowed in order to control unit inner glass flow according to the upstream unit's processing flag result. Processing flag starts with the indexer(or loader) and CIMPC does not have any flag. Lower word and bit of processing flag is used for the lower local stations. For example, Word 01's bit 0 is for the local number 2(Indexer) and bit 2 is for the local number 3 and so on. Basically one flag bit is assigned to a unit, but two or more flag bits could be assigned to a unit for special cases. Refer to the operation scenario for the detail use.	1	20
Processing Flag			
Where Used: S6F11 , S6F103			

5 Operating Characteristics

5.1 Control State

5.1.1 Definitions

The control state defines the level of cooperation between host and equipment. It also specifies how the operator may interact at the different levels of host control.

We will use **S1F1/F2**, **S1F15/F16** and **S1F17/F18** for Control State Management, and S6F11 is used for Change Event Report.

5.1.1.1 OFF-LINE

- ① Operation of the equipment is performed by operator at the operator console on equipment. Equipment gets CST ID through RF Reader. To continue Cassette (LOT) process, equipment must be able to get LOTID (must), PPID (must), and STEP (optional) from operator.
- ② Any message for automation purpose is severely restricted. We use an only message '**S1F17 and S2F41 (RCMD = 6: Operator Call)**'.
- ③ When the operator switches the mode to ON-LINE, the control mode must be changed if the following condition is true, else the equipment shall display error message on the operator console.
 - **Control mode must not change during Cassette Information Setting and then Click the start button by Operator.**
- ④ When the host request to the change of ON-LINE REMOTE mode, the control mode must be changed if the above condition is true, else the equipment shall response to message 'S1F18' with 'NAK'. The change to ON-LINE LOCAL mode by host is possible at any time.
- ⑤ Equipment should respond with SxF0 to any primary messages from host other than **S1F17 and S2F41 (RCMD = 6: Operator Call)**.
- ⑥ The State Which Communication disconnected is OFF-LINE Mode.

5.1.1.2 ON-LINE LOCAL

- ① Operation of the equipment is implemented by direct action of an operator.
- ② The equipment should send all equipment reports including alarms, events and process data to host. Also, the host should have capability to inquire the necessary data from equipment such as status data, equipment constants, event reports, process program directories and alarms.
- ③ The equipment should reject the remote command that will cause physical movement or affect the process. But the **S1F17 and S2F41 (RCMD = 2: CANCEL)** and **S2F41 (RCMD = 6: Operator Call)** and **S2F103(Cassette Information Download)** command is the only exception.
- ④ The switching for changing to 'ON-LINE REMOTE 'or 'OFF-LINE' should be always made possible even though a cassette is being set.
- ⑤ During processing, the equipment should reject any modification of equipment constants that affect that

process by host.

- ⑥ During processing, the equipment should reject uploading of recipe that affects current process.

5.1.1.3 ON-LINE REMOTE

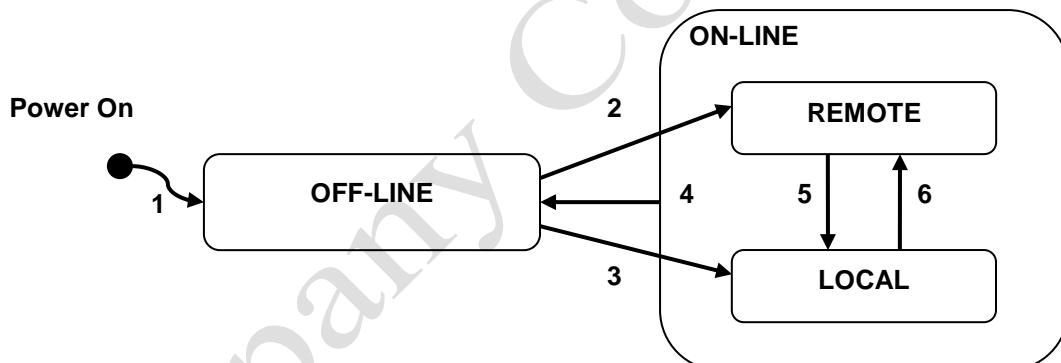
- ① The host shall have access, through the communications interface, to the necessary commands to operate the equipment through the full process cycle in an automated manner.
- ② At the least, the operator must have the capability to change control state, actuate an Emergency Stop, and interrupt processing (e.g., ‘STOP’, ‘ABORT’). All of these capabilities except Emergency Stop may be access-limited (like key in some password).
- ③ The switching for changing to ‘ON-LINE LOCAL’ or ‘OFF-LINE’ should be always made possible even though a cassette is being set.

5.1.2 Model

5.1.2.1 Description

The following diagram describes about the changes of control states. After equipment startup, the initial state will be OFF-LINE. And operator or engineer can make a switch about control state if necessarily.

5.1.2.2 Diagram



5.1.2.3 Transition Table

#	Cur. State	Trigger	New State	Comments
1	(Undefined)	System initialization like Power On.	OFF-LINE	The Equipment may wait to access an operator, engineer or host command.
2	OFF-LINE	An operator actuates ON-LINE REMOTE switch. Or the equipment accepts the host request to go ON-LINE (S1F17)	ON-LINE REMOTE	“Change to ON-LINE REMOTE event” occurred.
3	OFF-LINE	An operator actuates ON-LINE LOCAL switch.	ON-LINE LOCAL	“Change to ON-LINE LOCAL event” occurred.
4	ON-LINE	Operator actuates OFF-LINE switch. Or the	OFF-LINE	“Change to OFF-LINE event”

		equipment accepts the host request to go OFF-LINE (S1F15)		occurred.
5	ON-LINE REMOTE	Operator set front panel switch to ON-LINE LOCAL	ON-LINE LOCAL	“Change to ON-LINE LOCAL event” occurred.
6	ON-LINE LOCAL	Operator set front panel switch to ON-LINE REMOTE	ON-LINE REMOTE	“Change to ON-LINE REMOTE event” occurred.

5.2 Data Collection

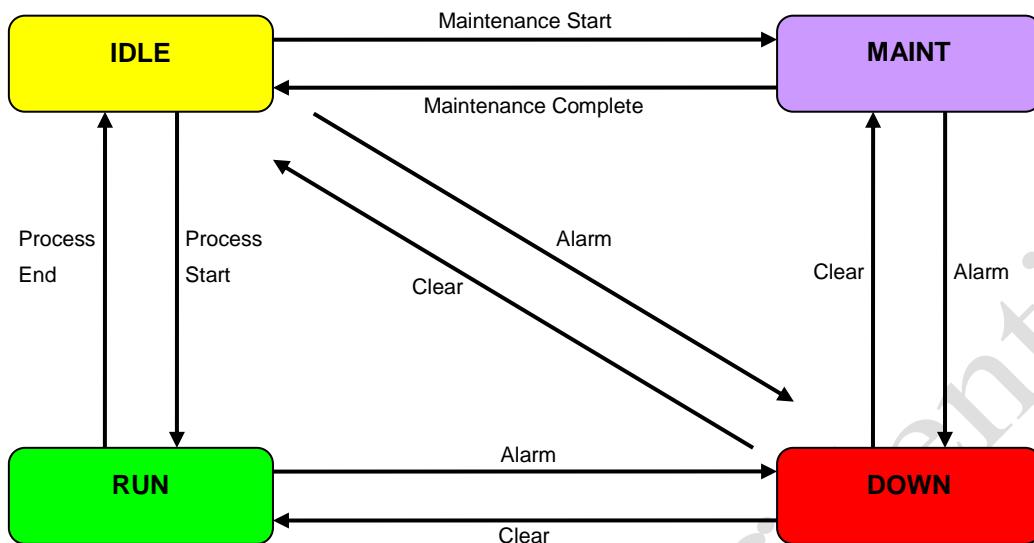
5.2.1 Definitions

Data collection allows the **host to monitor equipment activity** via event data reporting, trace data reporting, and query of selected status or other variable data.

The data type classification (SV, ECV, or DVVAL) of the item. Status values (SV's) always contain valid information, while data values (DVVAL's) may only be valid upon the occurrence of a particular event. All equipment constants (ECV's) are settable by the Host.

- Equipment Constants (ECV) – The value can be changed by the host using S2F15. The operator may have the ability to change some or all the values. The value of an equipment constant may be queried at any time by the host using the S2F13/14 transaction or Stream 6 reports.
- Status Variables (SVVAL) – The values are valid always. A SV may not be changed by the host or operator but may be changed by the equipment. A host or operator command may change an equipment status, thus changing an SV. The value of status variables may be queried by the host at any time using the S1F3/4 or Stream 6 reports.
- Data Variables (DVVAL) – These are variables which are valid upon the occurrence of a specific collection event and which may or may not be valid at other times, depending upon the equipment. An attempt to read a variable item when it is invalid will not result in an error, but the data reported may not have relevant meaning.

5.2.1.1 EQUIPMENT STATUS



5.2.1.2 EVENT DATA COLLECTION

- ① The equipment must provide data to the host at specified points in equipment operation.
- ② We will use **S6F11** for event data collection. About alarm event, you must use **S5F1/F2**.
- ③ The equipment must notify the host when equipment collection events occur.
- ④ Examples of collection events include:
 - The completion of each action initiated by a host requested command,
 - Selected processing activities,
 - Material handling activities,
 - Operator action (as button click, recipe modify, switch on/off, or etc.) detected by the equipment,
 - A state transition,
 - Etc.

5.2.1.3 PROCESS DATA COLLECTION

- ① The equipment is end of glass processing, it must report glass processing data to host.
- ② After all glass is end of processing, it also must report lot processing data to host.
- ③ The glass and lot data item need follow our processing requirement.
- ④ We will use **S6F3/F4**, and the SECSII format and value of the glass and lot data report depend on your equipment specification.
- ⑤ Equipment maker should offer SVID, DVID List for process data collection.
- ⑥ CIM engineer can set to enable/disable Variable ID on the equipment and equipment must reporting enable Value (SV, DV).

- ⑦ CIM engineer can edit the DVNAME and SVNAME.
- ⑧ All of processing units must report process data (Lot, Glass/Panel or Both) every completion of processing in the unit.
- ⑨ We may use the following CEID:

CEID	Kind of Collection Data
500	Glass Process Data
501	Lot Process Data

5.2.1.4 TRACE DATA COLLECTION

- ① Trace data collection provides a method of sampling data on a periodic base.
- ② The time-based approach to data collection is useful in tracking trends or repeated applications within a time window, or monitoring of continuous data.
- ③ We will use **S2F23/24** for Trace Initialization, and **S6F1/F2** is used for Trace Data Report.
- ④ The host shall designate a name for the trace report (**TRID**), a time interval for data sampling(**DSPER**), the total number of samples to be taken (**TOTSMP**), the number of samples per trace report (**REPGSZ**), and a listing of which data will be sent with the report (**SVIDs**).
- ⑤ In case of Inline equipment, discussed with factory engineer.

5.2.1.5 VARIABLE DATA COLLECTION

- ① The host will request to send parameter data variables to the equipment.
- ② The data variables are useful during initialization and synchronization.
- ③ The host may check for monitoring the equipment condition or parameters current values. Also, the host may wish a capability for APC/FDC.
- ④ We will use **S1F3/F4** at any time for Variable Data Collection.

5.2.1.6 STATUS DATA COLLECTION

- ① The host will request to the equipment for selected status information according to the SFCD.
- ② We may use the data to synchronize with equipment status.
- ③ We will use **S1F5/F6** at any time for Status Data Collection.

5.2.1.7 EQUIPMENT CONSTANT DATA COLLECTION

- ① The equipment maker must provide a method for the host to **read/write** the value of selected equipment constants on the equipment.
- ② We will use **S2F13/F14, S2F15/F16** for Equipment Constants Data Collection.

5.2.1.8 EVENT ENABLE/DISABLE

- ① Upon request from the host, the equipment shall **enable** or **disable** report of certain events.
- ② The event can be enabled and disabled separately. As this method, we will use **S2F37/F38** for Event

Control.

- ③ The current enable/disable settings must be stored in non-volatile memory.

5.3 Remote Control

5.3.1 Definitions

This capability provides the host with a level of control over equipment operations.

5.3.1.1 **PROCESS CONTROL**

- ① The Equipment must provide the ‘START’, ‘CANCEL’ and ‘ABORT’ command (as RCMD) for host to control equipment processing action.
- ② We will use **S2F41/F42** for Remote Control.
- ③ Host could select to start partial slots of any cassette.
- ④ The ‘SLOTSEL’ item of S2F103 means the information of selected slots.

5.3.1.2 **REMOTE ALERT**

- ① The host will use ‘OPERATOR CALL’ command for sending host message to operator.
- ② Equipment should provide popup display for ‘OPERATOR CALL’.
- ③ When the equipment is received this command, turn on the buzzer and signal light tower.
- ④ We will also use **S2F41 (RCMD = 6: Operator Call)** for Remote Alert.
- ⑤ The host will send ‘OPERATOR CALL’ to the equipment at any time. So, the equipment should respond to it at any time.
- ⑥ The equipment must save OPCALL data (port id, text, time, confirm state) which are received from the host more than 30. If an operator confirms an ‘OPERATOR CALL’, the equipment must report ‘OPERATOR CONFIRM’ event to the host with OPCALLID.

5.4 Cassette Information Download

5.4.1 Definitions

After Cassette loaded in Loader port, the host will download the glass or panel process information of the cassette. The equipment should verify the information like Port ID, Cassette ID, PPID and Slot Information, and so on. We will use **S2F103/F104** for it. The host can select only partial slots in the cassette to start. The ‘SLOTSEL’ item of S2F103 means which of the slots are selected.

5.4.1.1 **Ready To Start**

- ① When the equipment receives the cassette Information from the host, it should check the information. When all information from the host is valid, the equipment should report the ‘Ready To Start’ event to

the host immediately.

- ② If the host receives this event, it will send the Start Command to the equipment.
- ③ If control state isn't 'Online Remote', equipment shouldn't report 'Ready To Start' event to host.

5.5 Alarm Management

5.5.1 Definitions

The equipment maker must provide for host notification and management of alarm conditions occurring in the equipment. We will request equipment vendor to separate alarm to two kinds, light and serious. The alarm category should be configurable and determined by factory engineers. If there are several units in the equipment, alarm ID should be classified by unit.

5.5.1.1 **LIGHT ALARM**

- ① When the light alarm is happened during the processing time, the lot processing can continue to be processed without affected process result.
- ② The equipment must send alarm report.
- ③ We will use **S5F1/F2** for Alarm Event Collection

5.5.1.2 **SERIOUS ALARM**

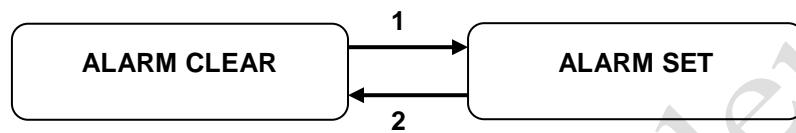
- ① When the serious alarm is happened, the equipment is halted and the lot processing is not continued until the equipment problem is solved.
- ② Also, the alarm may be controlled by an equipment engineer.
- ③ The equipment must send alarm report.
- ④ We will use **S5F1/F2** for Alarm Event Collection
- ⑤ There are two cases in these serious alarm situations. One, the problem is solved and then the lot processing can be continued. The other, the equipment will be reset to initial state so that the process will not be continued.
- ⑥ If a serious alarm occurs, equipment should report the event that the equipment, unit or chamber status is changed to 'DOWN'. After the alarm was cleared, the equipment should report the alarm clear report and the equipment, unit or chamber status is changed to 'IDLE' or 'RUN'.

5.5.1.3 **ALARM ENABLED/DISABLED**

- ① Upon request from the host, the equipment shall enable or disable reporting of certain alarms.
- ② The alarm-set and alarm-cleared events can be enabled and disabled separately. As this method, we will use **S5F3/F4** for Alarm Event Control.
- ③ The current enable/disable settings must be stored in non-volatiles memory.
- ④ CIM engineer can set the state of enable/disable alarms (ALED) on the equipment.
- ⑤ CIM engineer can change the alarm code of an alarm (ALCD) on the equipment.

5.5.1.4 Current Alarm List Request

- ① When an alarm is occurred or not cleared, the equipment should preserve the alarm until it is cleared.
- ② The host can request current alarm list which are not cleared at any time. The equipment should reply the alarm list.
- ③ We will use **S5F103/F104** for this method.

5.5.2 Model**5.5.2.1 Diagram****5.5.2.2 Transition Table**

#	Cur. State	Trigger	New State	Comments
1	ALARM CLEAR	Alarm is detected on the equipment.	ALARM SET	Turn on the buzzer and signal light tower
2	ALARM SET	Alarm is no longer detected on the equipment.	ALARM CLEAR	Turn off the buzzer and signal light tower

5.6 Process Program (Recipe) Management**5.6.1 Definitions**

Process programs (the same recipes) must be managed through interaction between the equipment and host system. Process program management will provide a means to share the management of those process programs or recipes, between the host and equipment.

We think the equipment is supported to achieve enhanced host control over the processing of the material and also as prerequisite for APC (Advanced Process Control) functionality to be incorporated later.

We will use **S7F19/F20** and **S7F25/F26** for Process Program Management and **S6F11** is used for Change Event Report.

A process program must be controlled ‘PPID’ used to identify a process program by the host in ON-LINE REMOTE or operator in ON-LINE LOCAL.

Also, we will use only the follow functions:

- Process Program Directory Request
- Formatted Process Program Send
- Formatted Process Program Request

(Also, this function will be used to validate and verify a recipe between the equipment and host.)

- Process Program Change Event

5.6.1.1 PROCESS PROGRAM

- ① Process programs allow the equipment's process, and/or the parameters used by that process, to be set and modified by the engineer to achieve different results.
- ② Different process programs may be required for different Glass, while often the same process program will be used for all lots of a given Glass.
- ③ The engineer must be able to create such programs, to modify current programs, and to delete programs from equipment storage
- ④ A program or recipe, denoted, controls how settings are initialized or changed during a process step.
- ⑤ A recipe might also be a computer program executed directly by the unit or a unit controller.
- ⑥ A recipe is usually considered constant during any one process step (though explicit consideration of program state might be useful for simulating the operation of some control algorithm).
- ⑦ A recipe might change, however, between process step executions.

5.7 Clock

5.7.1 Definitions

The clock capability assumes the existence of a relative time reference on the equipment.

When equipment receives **Date and Time Data** (S2F18), Equipment should change that time.

We will use **S2F17/F18, S2F31/F32** for Equipment Current Time.

5.8 Error Message

5.8.1 Definitions

Error messages provide the host with information describing the reason for a particular message or communication fault detected by the equipment.

The messages indicate either a message fault or a communications fault has occurred but do not indicate a communications failure has occurred.

5.9 Equipment Terminal Service

5.9.1 Definitions

Equipment Terminal Service allows the host to display information on the equipment's display device or the operator of equipment to send information to the host.

This service allows the factory operators to exchange information with the host from their equipment workstations.

FRONTPANELSTRUCTURE

Refer to Front Panel Section.

Company Confidential

6 MESSAGE DETAIL

6.1 Stream 1 Equipment Status

This stream provides a means for exchanging information about the status of the equipment, including its current mode, depletion of various consumable items, and the status of transfer operations.

Stream	Function	Function Name	Direction	Reply
1	0	Abort Function	H↔E	N

Description:

Used instead of an expected reply to abort a transaction. Function 0 is defined in every stream and has the same meaning in every stream.

Structure:

Header Only

Stream	Function	Function Name	Direction	Reply
1	1	Are You There Request	H↔E	Y

Description:

Establishes if the equipment is on-line. A function 0 response to this message means the communication is inoperative. In the equipment, a function 0 is equivalent to a timeout on the receive timer after issuing S1, F1 to the host.

Structure:

Header Only

Stream	Function	Function Name	Direction	Reply
1	2	On Line Data	H↔E	N

Description:

Data signifying that the equipment is alive.

Structure:

<L[2]

- 1.<A[6] ‘6 Bytes’ [MDLN]>
- 2.<A[6] ‘6 Bytes’ [SOFTREV]>

Exception:

The host sends a zero-length list to the equipment.

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Stream	Function	Function Name	Direction	Reply
1	3	Selected Equipment Status Request	H→E	Y

Description:

A request to the equipment to report selected data values of its variables.

Structure:

<L[n]

1.<A[5] '5 Bytes' [SVID]>

※ n is SVID count.

Exception:

A zero-length list means report all SVIDs.

Stream	Function	Function Name	Direction	Reply
1	4	Selected Equipment Status Data	H←E	N

Description:

The equipment reports the value of each SVID requested in the order requested. The host remembers the names of values requested.

Structure:

<L[n]

1.<A[40] '40 Bytes' [SV]>

※ n is SV count.

Exception:

A zero-length list item for SVi means that SVIDi does not exist.

Stream	Function	Function Name	Direction	Reply
1	5	Formatted Status Request	H→E	Y

Description:

The host requests the equipment report the status according to a predefined fixed format.

Structure:

<A[2] '2 Byte' [SFCD]>

Stream	Function	Function Name	Direction	Reply
1	6	Formatted Status Data	H←E	N

Description:

The equipment reports the value of status variables according to the SFCD.

Structure:

Depends upon the structure specified by the status form (SFCD). (Be composed of Equipment status, Chamber status, and Port status etc.)

If SFCD = 01 /*Equipment Status Request*/

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[3]

1.<A[1] '1 Byte' [CRST]>

2.<A[1] '1 Byte' [EQST]>

3.<A[4] '4 Byte' [EQSTCODE]

Else If SFCD = 02, /* Port Status Request*/ Crate & Half port does not report. crate port SFCD=10, Half

port=11

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[n]

<L[9]

1.<A[3] '3 Bytes' [PTID]>

2.<A[2] '2 Bytes' [PTTYPE]>

3.<A[2] '2 Bytes' [PTUSETYPE]>

4.<A[1] '1 Byte' [TRSMODE]>

5.<A[1] '1 Byte' [PTST]>

6.<A[20] '20 Bytes' [CSTID]>

7.<A[20] '20 Bytes' [LOTID]>

8.<A[40] '40 Bytes' [PPID]>

9.<A[26] '26 Bytes' [SLOTINFO]>

※ n is Port count

※ If one cassette has more than two lots, 'LOTID', 'PPID' and 'LOTST' should be empty.

Else If SFCD = 03, /* Operation Status Request */

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[2]

- 1.<A[2] '2 Bytes' [OPERMODE]>
- 2.<A[40] '40 Bytes' [OPERMODEDESC]>

Else If SFCD = 04, /* UNIT Status Request */

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[n]

1.<L[4]

- 1.<A[20] '20 Bytes' [UNITID]>
- 2.<A[1] '1 Byte' [UNITST]>
- 3.<A[4] '4 Byte' [UNITSTCODE]>

4.<L[k]

1. <L[2]

- 1.<A[4] '4 Bytes' [USLOTNO]>
- 2.<A[20] '20 Bytes' [GLSID]>

※ n is Unit count.

※ k is Glass count.

Else If SFCD = 05, /*Sub- UNIT Status Request */

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[n]

1.<L[2]

1.<A[20] '20 Bytes' [UNITID]>

2.<L[m]

1. <L[4]

- 1.<A[20] '20 Bytes' [SUNITID]>
- 2.<A[1] '1 Byte' [SUNITST]>
- 3.<A[4] '4 Byte' [SUNITSTCODE]>

4.<L[k]

1. <L[2]

- 1.<A[2] '2 Bytes' [SSLOTNO]>
- 2.<A[20] '20 Bytes' [GLSID]>

※ n is Unit count.

※ m is Sub-Unit count

※ k is Glass count.

Else If SFCD = 06, /*Sub-Sub- UNIT Status Request */

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[n]

1.<L[2]

1.<A[20] '20 Bytes' [UNITID]>

2.<L[m]

1. <L[4]

1.<A[20] '20 Bytes' [SSUNITID]>

2.<A[1] '1 Byte' [SSUNITST]>

3.<A[4] '4 Byte' [SSUNITSTCODE]>

4.<L[k]

1. <L[2]

1.<A[2] '2 Bytes' [SSSLOTNO]>

2.<A[20] '20 Bytes' [GLSID]>

※ n is Unit count.

※ m is Sub-Sub-Unit count

※ k is Glass count.

Else If SFCD = 07, /* Mask Status Request*/

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[n]

1.<L[3]

1.<A[20] '20 Bytes' [UNITID]>

2.<L[k]

1.<L[3]

1.<A[30] '30 Bytes' [MASKID]>

2.<A[2] '2 Byte' [MASKST]>

3.<A[5] '5 Bytes' [MASKUSECNT]>

3.<L[m]

1.<L[2]

1.<A[20] '20 Bytes' [SUNITID]>

2.<L[k]

1.<L[3]

1.<A[30] '30 Bytes' [SUNITMASKID]>

2.<A[2] '2 Byte' [SUNITMASKST]>

3.<A[5] ‘5 Bytes’ [SUNITMASKUSECNT]>

※ n is Unit count.

※ m is Sub-Unit count.

※ k is Mask count.

Else If SFCD = 08, /* Material Status Request */

<L[2]

1.<A[2] ‘2 Byte’ [SFCD]>

2.<L[n]

1.<L[5]

- 1.<A[20] ‘20 Bytes’ [UNITID]>
- 2.<A[30] ‘30 Bytes’ [MATERIALTYPE]>
- 3.<A[30] ‘30 Bytes’ [MATERIALID]>
- 4.<A[1] ‘1 Byte’ [MATERIALST]>
- 5.<A[10] ‘10 Byte’ [MATERIALUSED CNT]>

※ n is Material count.

Else If SFCD = 09, /*Sorter Job List Request */

<L[2]

1.<A[2] ‘2 Byte’ [SFCD]>

2.<L[2]

- 1.<A[20] ‘20 Bytes’ [SORTERJOBID]>
- 3.<A[1] ‘1 Byte’ [SORTERJOBST]>

Else If SFCD = 10, /* Crate Port Status Request*/

<L[2]

1.<A[2] ‘2 Byte’ [SFCD]>

2.<L[n]

<L[8]

- 1.<A[3] ‘3 Bytes’ [PTID]>
- 2.<A[2] ‘2 Bytes’ [PTTYPE]>
- 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
- 4.<A[1] ‘1 Byte’ [TRSMODE]>
- 5.<A[1] ‘1 Byte’ [PTST]>
- 6.<A[20] ‘20 Bytes’ [CSTID]>
- 7.<A[20] ‘20 Bytes’ [LOTID]>
- 8.<A[20] ‘20 Bytes’ [CRATEID]>

Else If SFCD = 11, /* Half Port Status Request*/

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[n]

<L[9]

1.<A[3] '3 Bytes' [PTID]>

2.<A[2] '2 Bytes' [PTTYPE]>

3.<A[2] '2 Bytes' [PTUSETYPE]>

4.<A[1] '1 Byte' [TRSMODE]>

5.<A[1] '1 Byte' [PTST]>

6.<A[20] '20 Bytes' [CSTID]>

7.<A[20] '20 Bytes' [LOTID]>

8.<A[40] '40 Bytes' [PPID]>

9.<A[52] '52 Bytes' [HSLOTINFO]>

Else If SFCD = 12, /* Port load-request and Unload-Request report start */

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[0]

Else If SFCD = 13, /* Recycle mode status Request */

<L[2]

1.<A[2] '2 Byte' [SFCD]>

2.<L[5]

1.<A[1] '1 Byte' [CRST]>

2.<A[1] '1 Byte' [EQST]>

3.<A[4] '4 Byte' [EQSTCODE]>

4.<A[1] '1 Byte' [RECYCLEST]>

5.<L[n] / exist cassette list report /

<L[2]

1.<A[3] '3 Bytes' [PTID]>

2.<A[20] '20 Bytes' [CSTID]>

Stream	Function	Function Name	Direction	Reply
1	11	Status Variable Name-List Request	H→E	Y

Description:

A request to the equipment to report selected data values of its variable Name-list.

Structure:

<L[n]

1.<A[5] ‘5 Bytes’ [SVID]>

※ n is SVID count.

Exception:

A zero-length list means report all SVIDs.

Stream	Function	Function Name	Direction	Reply
1	12	Status Variable Name-List Reply	H←E	N

Description:

The equipment reports the value of each SVID requested in the order requested. The host remembers the names of values requested.

Structure:

<L[n]

1.<L[2]

- 1.<A[5] ‘5 Bytes’ [SVID]>
- 2.<A[40] ‘40 Bytes’ [SVNAME]>

※ n is SVID List count.

Exception:

A zero-length list item for SV means that SVID does not exist.

Stream	Function	Function Name	Direction	Reply
1	13	Establish Communication Request	H↔E	Y

Description:

The purpose of this message is to provide a formal means of initializing communications both on power-up and following a break in communications. An attempt to send an Establish Communications Request should be repeated at programmable intervals until an Establish Communications Acknowledge is received within the transaction timeout period with an acknowledgement code accepting the establishment.

Structure:

<L[2]

- 1.<A[6] ‘6 Bytes’ [MDLN]>
- 2.<A[6] ‘6 Bytes’ [SOFTREV]>

Exception

The host sends a zero-length list to the Equipment

Stream	Function	Function Name	Direction	Reply
1	14	Establish Communications Acknowledge	H↔E	N

Description:

Accept or deny Establish Communications Request. MDLN and SOFTREV are on-line data and are valid only if ACK=0.

Structure:

<L[2]

1. <A[1] ‘1 Byte’ [ACK]>
2. <L[2]>
 - 1.<A[6] ‘6 Bytes’ [MDLN]>
 - 2.<A[6] ‘6 Bytes’ [SOFTREV]>

Exception

The host sends a zero-length list for item 2 to the Equipment

Stream	Function	Function Name	Direction	Reply
1	15	Request OFF-LINE	H→E	Y

Description:

The host requests that the equipment transition to the OFF-LINE state.

Structure:

Header Only

Stream	Function	Function Name	Direction	Reply
1	16	OFF-LINE Acknowledge	H←E	N

Description:

Acknowledge or error.

Structure:

<A[1] ‘1 Byte’ [OFLACK]>

Stream	Function	Function Name	Direction	Reply
1	17	Request ON-LINE	H→E	Y

Description:

The host requests that the equipment transition to the ON-LINE state.

Structure:

<A[1] ‘1 Byte’ [CRST]>

Exception

Stream	Function	Function Name	Direction	Reply
1	18	ON-LINE Acknowledge	H←E	N

Description:

Acknowledge or error.

Structure:

<A[1] ‘1 Byte’ [ONLACK]>

6.2 Stream 2 Equipment Control and Diagnostics

Messages which deal with control of the equipment from the host.

Stream	Function	Function Name	Direction	Reply
2	13	Equipment Constants Request	H→E	Y

Description:

Constants such as for calibration, servo gain, alarm limits, data collection mode, and other values that are changed infrequently can be obtained using this message.

Structure:

<L[n]

1.<A[4] ‘4 Bytes’ [ECID]>

※ n is ECID count.

Exception:

A zero-length list means report all ECVs according to a predefined order.

Stream	Function	Function Name	Direction	Reply
2	14	Equipment Constant Data	H←E	N

Description:

Data Response to S2, F13 in the order requested.

Structure:

<L[n]

1.<A[10] '10 Bytes' [ECV]>

※ n is ECV count.

Exception:

A zero-length list item for ECV_i means that ECID_i does not exist.

Stream	Function	Function Name	Direction	Reply
2	15	New Equipment Constants Send	H→E	Y

Description:

Change one or more equipment constants.

Structure:

<L[n]

1.<L[2]

1.<A[4] '4 Bytes' [ECID]>

2.<A[10] '10 Bytes' [ECV]>

※ n is ECID count.

Exception:

Stream	Function	Function Name	Direction	Reply
2	16	New Equipment Constant Ack.	H←E	N

Description:

Acknowledge or error. If EAC constants a non-zero error code, the equipment should be change any of the ECIDs specified in S2F15.

Structure:

<A[1] '1 Byte' [EAC]>

Exception:

Stream	Function	Function Name	Direction	Reply
2	17	Date & Time Request	H←E	Y

Description:

Use to check host time.

Structure:

Header only

Stream	Function	Function Name	Direction	Reply
2	18	Date and Time Data	H→E	N

Description:

Actual time data.

Structure:

<A[14] '14 Bytes' [TIME]>

Exception:

Stream	Function	Function Name	Direction	Reply
2	23	Trace Initialize Send	H→E	Y

Description:

Status variables exist always. This function provides a way to sample a subset of those status variables as a function of time. The trace data is returned on S6, F1 and is related to the original request by the TRID multiple trace requests may be made to that equipment allowing it. If equipment receives S2, F23 with the same TRID as a trace function that is currently in progress, the equipment should terminate the old trace and then initiate the new trace. A trace function currently in progress may be terminated by S2, F23 with TRID of that trace and TOTSMP=0.

The Each equipment shall document its trace performance limits. The host computer shall not send an S2, F23 which exceeds the equipment's performance limits, or the equipment may operate incorrectly.

Structure:

<L[5]

- 1.<A[2] '2 Bytes' [TRID]>
- 2.<A[6] '6 Bytes' [DSPER]>
- 3.<A[5] '5 Bytes' [TOTSMP]>
- 4.<A[3] '3 Bytes' [REPGSZ]>
- 5.<L[n]
 - 1.< A[5] '5 Bytes' [SVID]>

※ n is requested SVID count.

※ TOTSMP = -1 means infinite count.

Stream	Function	Function Name	Direction	Reply
2	24	Trace Initialize Acknowledge	H←E	N

Description:

Acknowledge or error.

Structure:

<A[1] '1 Byte' [TIAACK]>

Stream	Function	Function Name	Direction	Reply
2	29	Equipment Constant Name List Request	H→E	Y

Description:

A request to the equipment to report selected data values of its variable Name list.

Structure:

<L[n]

1.<A[4] '4 Bytes' [ECID]>

※ n is ECID count.

A zero-length list means report all ECIDs.

Stream	Function	Function Name	Direction	Reply
2	30	Equipment Constant Name List Reply	H←E	N

Description:

The equipment reports the value of each ECID requested in the order requested. The host remembers the names of values requested.

Structure:

<L[n]

1.<L[5]

- 1.<A[4] '4 Bytes' [ECID]>
- 2.<A[40] '40 Bytes' [ECNAME]>
- 3.<A[10] '10 Bytes' [ECMIN]>
- 4.<A[10] '10 Bytes' [ECMAX]>
- 5.<A[10] '10 Bytes' [ECV]>

※ n is EC List count

Stream	Function	Function Name	Direction	Reply
2	31	Date and Time Set Request (DTS)	H→E	Y

Description:

Useful to synchronize the equipment time with the host time base.

Structure:

<A[14] '14 Bytes' [TIME]>

Stream	Function	Function Name	Direction	Reply
2	32	Date and Time Set Acknowledge (DTA)	H←E	N

Description:

Acknowledge the receipt of time and date.

Structure:

<A[1] '1 Byte'[TIACK]>

Stream	Function	Function Name	Direction	Reply
2	37	Enable or Disable Event Report	H→E	Y

Description:

Host can select use or not use event using this message.

Structure:

<L[2]

- 1.<A[1] '1 Byte' [CEED]>
- 2.<L[n]
 - 1.<A[3] '3 Bytes' [CEID]>

※ n is Enable or Disable CEID count.

A zero-length list means all CEIDs.

Stream	Function	Function Name	Direction	Reply
2	38	Enable or Disable Event Report Acknowledge	H←E	N

Description:

Acknowledge or error.

Structure:

<A[1] '1 Byte' [ERACK]>

Stream	Function	Function Name	Direction	Reply
2	39	Current Enable/Disable Event List	H→E	Y

Description:

Host use this message wants to know equipment's current enabled or disabled event list.

Structure:

A[1] '1 Byte' [CEED]>

Stream	Function	Function Name	Direction	Reply
2	40	Current Enable/Disable Event List	H←E	N

Description:

Current enabled or disabled event list data reply to host.

Structure:

<L[2]

1.<A[1] '1 Byte' [CEED]>

2.<L[n]

1.< A[3] '3 Byte' [CEID]>

※ n is Equipment's current Enabled or Disabled event count

Stream	Function	Function Name	Direction	Reply
2	41	Host Command Send	H→E	Y

Description:

The Host requests the Equipment perform the specified remote command with the associated parameters.

OpCall messages must display a maximum of 20.

When the operator presses the confirm button, report with the latest message.

Structure:

[RCMD = 1, 2, 3, 4, 5]

/*START, CANCEL, ABORT, PAUSE, RESUME*/

<L[2]

1.<A[1] '1 Byte' [RCMD]>

2.<L[3]

1.<L[2]

1.<A[4] 'PTID'>

2.<A[3] '3 Bytes' [PTID]>

2.<L[2]

1.<A[5] 'CSTID'>

2.<A[20] '20 Bytes' [CSTID]>

3.<L[2]

1.<A[5] 'LOTID'>

2.<A[20] '20 Bytes' [LOTID]>

[RCMD = 6]

/*Operator Call*/

<L[2]

1.<A[1] '1 Byte' [RCMD]>

2.<L[1]

1.<L[2]

1.<A [6] 'OPCALL'>

2.<A[80] '80 Bytes' [MESSAGE]>

[RCMD = 7] /* Mask CST CANCEL */

<L[2]

1.<A[1] '1 Byte' [RCMD]>

2.<L[4]

1.<L[2]

1.<A[4] 'PTID'>

2.<A[3] '3 Bytes' [PTID]>

2.<L[2]

1.<A[5] 'CSTID'>

2.<A[20] '20 Bytes' [CSTID]>

3.<L[2]

1.<A[6] 'UNITID'>

2.<A[20] '20 Bytes' [UNITID]>

4.<L[2]

1.<A[7] 'SUNITID'>

2.<A[20] '20 Byte' [SUNITID]>

[RCMD = 8] /* Un-packer Bar Code Data (crate-id) result */

<L[2]

1.<A[1] '1 Byte' [RCMD]>

2.<L[3]

1.<L[2]

1.<A[4] 'PTID'>

2.<A[3] '3 Bytes' [PTID]>

2.<L[2]

1.<A[5] 'CSTID'>

2.<A[20] '20 Bytes' [BARCODEDADATA]>

3.<L[2]

1.<A[6] 'RESULT'>

2.<A[1] '1 Bytes' [BARCODEDADATARESULT]>

[RCMD = 9] /* ReCycle mode command */

<L[1]

1.<A[1] ‘1 Byte’ [RCMD]>

Stream	Function	Function Name	Direction	Reply
2	42	Host Command Acknowledge	H←E	N

Description:

Acknowledge Host command or error.

Structure:

<L[2]

1.<A[1] ‘1 Byte’ [RCMD]>

2.<A[1] ‘1 Byte’ [HCACK]>

Stream	Function	Function Name	Direction	Reply
2	53	Crate glass QTY download	H→E	Y

Description :

Host send QTY for Crate whenever Crate is load completed.

Structure :

<L[2]

1.<A[20] ‘20 Bytes’ [CRATEID]>

2.<A[3] ‘3 Bytes’ [CRATEQTY]>

Stream	Function	Function Name	Direction	Reply
2	54	Crate glass QTY download Ack.	H←E	N

Description :

Crate glass QTY download Acknowledge

Structure :

<A[1] ‘1 Byte’ [ACK]>

Stream	Function	Function Name	Direction	Reply
2	103	Cassette Information Download	H→E	Y

Description:

Host sends the Cassette Information of the cassette that has just loaded in the loader of the equipment.

Format1: Cassette Information Download (Glass)**Structure:**

<L[9]

1.<A[3] ‘3 Bytes’ [PTID]>

2.<A[2] ‘2 Bytes’ [PTUSETYPE]>

- 3.<A[2] ‘2 Bytes’ [PTTYPE]>
- 4.<A[20] ‘20 Bytes’ [CSTID]>
- 5.<A[3] ‘3 Bytes’ [QTY]>
- 6.<A[3] ‘3 Bytes’ [CRATEQTY]>
- 7.<A[26] ‘26 Bytes’ [SLOTSEL]>
- 8.<A[52] ‘52 Bytes’ [HSLOTSEL]> /*if it isn’t Half Cassette, Empty*/
- 9.<L[n]
- 10.1.<L[26]
 - 1.<A[20] ‘20 Bytes’ [LOTID]>
 - 2.<A[20] ‘20 Bytes’ [OPERID]>
 - 3.<A[20] ‘20 Bytes’ [PRODID]>
 - 4.<A[1] ‘1 Byte’ [LOTJUDGE]>
 - 5.<A[3] ‘3 Bytes’ [SLOTNO]>
 6. <A[1] ‘1 Byte’ [SLOTPOSITION]> /Half Cassette/
 - 7.<A[20] ‘20 Bytes’ [GLSID]>
 - 8.<A[40] ‘40 Bytes’ [PPID]>
 - 9.<A[1] ‘1 Byte’ [GLSTYPE]>
 - 10.<A[1] ‘1 Byte’ [GLSIDTYPE]>
 - 11.<A[1] ‘1 Byte’ [GLSJUDGE]>
 - 12.<A[1] ‘1 Byte’ [GLSGRADE]>
 - 13.<A[30] ‘30 Byte’ [WORKORDER]>
 - 14.<A[20] ‘20 Bytes’ [MAKER]>
 - 15.<A[5] ‘5 Bytes’ [GLSTHK]>
 - 16.<A[1] ‘1 Bytes’ [GLSSIZE]>
 - 17.<A[1] ‘1 Byte’ [SMPLFLAG]>
 - 18.<A[1] ‘1 Byte’ [RWKCNT]>
 - 19.<A[4] ‘4 Bytes’ [DUMUSEDCNT]>
 - 20.<A[30] ‘30 Bytes’ [MASKID]> /Mask user EQ only/
 - 21.<A[20] ‘20 Bytes’ [PROBERID]> /Prober user EQ only/
 22. <A[800] ‘800 Bytes’[PANELJUDGE]>
 23. <A[800] ‘800 Bytes’[ARRAYREPAIRTYPE]> / Used at Array Cut Repair /
 24. <A[800] ‘800 Bytes’[LCVDREPAIRTYPE]> / Used at L-CVD Repair /
 25. <A[20] ‘20 Bytes’[EXPUNITID]> / User TP,CD EQ /
 26. <A[30] ‘30 Bytes’[EXPRCPID]> / User TP,CD EQ /

※ n is Glass count.

Format2: Tray Information Download (Tray) /*Empty Tray Load in Tray Load Port*/**Structure:**

<L[8]

- 1.<A[3] '3 Bytes' [PTID]>
- 2.<A[2] '2 Bytes' [PTUSETYPE]>
- 3.<A[2] '2 Bytes' [PTTYPE]>
- 4.<A[20] '20 Bytes' [TRAYID]> /*Tray Cover ID*/
- 5.<A[3] '3 Bytes' [QTY]> /*Tray Count*/
- 8.<L[n]

1.<L[8]

- 1.<A[20] '20 Bytes' [LOTID]>
- 2.<A[20] '20 Bytes' [OPERID]>
- 3.<A[20] '20 Bytes' [PRODID]>
- 4.<A[1] '1 Byte' [LOTJUDGE]>
- 5.<A[20] '20 Bytes' [TRAYID]> /*Tray ID*/
- 6.<A[40] '40 Bytes' [PPID]>
- 7.<A[3] '3 Byte' [CELLCOUNT]>
- 8.<L[0]

※ n is Tray count.

※ m is Cell count.

Format3: Tray Information Download (Cell) /*Cell Tray Load in Tray Load Port*/**Structure:**

<L[8]

- 1.<A[3] '3 Bytes' [PTID]>
- 2.<A[2] '2 Bytes' [PTUSETYPE]>
- 3.<A[2] '2 Bytes' [PTTYPE]>
- 4.<A[20] '20 Bytes' [TRAYID]> /*Tray Cover ID*/
- 5.<A[3] '3 Bytes' [QTY]> /*Tray Count*/
- 8.<L[n]
- 1.<L[8]
 - 1.<A[20] '20 Bytes' [LOTID]>
 - 2.<A[20] '20 Bytes' [OPERID]>
 - 3.<A[20] '20 Bytes' [PRODID]>
 - 4.<A[1] '1 Byte' [LOTJUDGE]>
 - 5.<A[20] '20 Bytes' [TRAYID]> /*Tray ID*/
 - 6.<A[40] '40 Bytes' [PPID]>
 - 7.<A[3] '3 Byte' [CELLCOUNT]>
 - 8.<L[m]

1.<L[7]

- 1.<A[3] ‘3 Bytes’ [SLOTNO]>
- 2.<A[20] ‘20 Bytes’ [GLSID]>
- 3.<A[40] ‘40 Bytes’ [PPID]>
- 4.<A[1] ‘1 Byte’ [GLSTYPE]>
- 5.<A[1] ‘1 Byte’ [GLSIDTYPE]>
- 6.<A[1] ‘1 Byte’ [GLSJUDGE]>
- 7.<A[1] ‘1 Byte’ [GLSGRADE]>

※ n is Tray count.

※ m is Cell count.

Stream	Function	Function Name	Direction	Reply
2	104	Cassette Information Download Ack.	H←E	N

Description:

Acknowledge Cassette Information Download or error.

Structure:

<A[1] ‘1 Byte’ [CIACK]>

Stream	Function	Function Name	Direction	Reply
2	105	Empty CST Permission	H→E	Y

Description :

When the Port loaded some Empty CST for use unloading Glasses in the EQP, Host send the permission information to control the CST.

Structure :

<L[4]

- 1.< A[3] ‘3 Bytes’ [PTID]>
- 2.<A[20] ‘20 Bytes’ [CSTID]>
- 3.<A[1] ‘1 Bytes’ [EMPTYCSTPMS]>
- 4.<A[80] ‘80 Bytes’ [HOSTMSG]>

Stream	Function	Function Name	Direction	Reply
2	106	Empty CST Permission Reply	H←E	N

Description :

Acknowledge of Empty Cassette Permission.

Structure :

1.<A[1] ‘1 Bytes’ [ECACK]>

Stream	Function	Function Name	Direction	Reply
2	107	Sorter Job Command	H→E	Y

Description :

When all of Sorter Port loaded cassette, Host download sorter source and destination information.

Also, this include the Sorter Job ID for distinguish from another sorter job.

Structure :

<L[2]

1.<A[20] ‘20 Bytes’ [SORTERJOBID]>

2. <L[n]

1.<L[4]

1.<A[20] ‘20 Bytes’ [LOTID]>

2.<A[3] ‘3 Bytes’ [PTID]> /* it can be blank */

3.<A[20] ‘20 Bytes’ [CSTID]>

4. <L[m]

1.<L[9]

1.<A[20] ‘20 Bytes’ [GLSID]>

2.<A[3] ‘3 Bytes’ [FSLOTNO]>

3. <A[1] ‘1 Bytes’ [FSLOTPOSITION]>

4.<A[3] ‘3 Bytes’ [TPTID]> /* it can be blank */

5.<A[20] ‘20 Bytes’ [TCSTID]>

6.<A[3] ‘3 Bytes’ [TSLOTNO]>

7. <A[1] ‘1 Bytes’ [TSLOTPOSITION]>

8.<A[1] ‘1 Byte’ [SORTURNFLAG]>

9.<A[1] ‘1 Byte’ [SORTSCRAPFLAG]>

※n is to be LOTID count.

※m is Glass count.

Stream	Function	Function Name	Direction	Reply
2	108	Sorter Job Command Ack	H←E	N

Description :

Equipment reply sorter job command ack for this command is valid or not.

Structure :

<L[2]

1.<A[1] ‘1 Byte’ [SCACK]>

2.<A[20] ‘20 Bytes’ [SORTERJOBID]>

Stream	Function	Function Name	Direction	Reply
2	109	Mask cassette information Download	H→E	Y

Description :

Mask Cassette slot information download

Structure :

<L[8]

- 1.< A[3] ‘3 Bytes’ [PTID]>
- 2.<A[2] ‘2 Bytes’ [PTTYPE]>
- 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
- 4.<A[20] ‘20 Bytes’ [CSTID]>
- 5.<A[20] ‘20 Bytes’ [UNITID]>
- 6.<A[20] ‘20 Byte’ [SUNITID]>
- 7.<A[1] ‘1 Byte’ [MASKCSTTYPE]>
- 8.<L[n]
 - 1.<L[17]
 - 1.<A[30] ‘30 Bytes’ [MASKID]>
 - 2.<A[30] ‘30 Bytes’ [MASKGROUPNAME]>
 - 3.<A[10] ‘10 Bytes’ [MASKTYPE]>
 - 4.<A[40] ‘40 Bytes’ [PPID]>
 - 5.<A[3] ‘3 Bytes’ [SLOTNO]> /Mask CST slot number/
 - 6.<A[20] ‘20 Byte’ [MASKINSUNITID]> /Evaporation insert sub-unit/
 - 7.<A[2] ‘2 Bytes’ [SSLOTNO]> / Evaporation sub-unit Stage number/
 - 8.<A[5] ‘5 Bytes’ [MASKMAXCNT]>
 - 9.<A[10] ‘10 Bytes’ [OFFSETX]>
 - 10.<A[10] ‘10 Bytes’ [OFFSETY]>
 - 11.<A[10] ‘10 Bytes’ [OFFSETT]>
 - 12.<A[10] ‘10 Bytes’ [MASKMAGNET]>
 - 13.<A[10] ‘10 Bytes’ [MASKTHICKNESS]>
 - 14.<A[20] ‘20 Bytes’ [PRODID]>
 - 15.<A[30] ‘30 Bytes’ [MASKSPEC]>
 - 16.<A[30] ‘30 Bytes’ [SPARE1]> item not fix
 - 17.<A[30] ‘30 Bytes’ [SPARE2]> item not fix

※n is Mask count.

Stream	Function	Function Name	Direction	Reply
2	110	Mask cassette information Download ack	H←E	N

Description :

Structure :

1.<A[1] ‘1 Bytes’ [MCACK]>

Stream	Function	Function Name	Direction	Reply
2	111	Mask cassette information Download EVA	H→E	Y

Description :

Mask Cassette slot information download

Structure :

<L[8]

- 1.< A[3] ‘3 Bytes’ [PTID]>
- 2.<A[2] ‘2 Bytes’ [PTTYPE]>
- 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
- 4.<A[20] ‘20 Bytes’ [CSTID]>
- 5.<A[20] ‘20 Bytes’ [UNITID]>
- 6.<A[20] ‘20 Byte’ [SUNITID]>
- 7.<A[1] ‘1 Byte’ [MASKCSTTYPE]>
- 8.<L[n]

1.<L[15]

- 1.<A[30] ‘30 Bytes’ [MASKID]>
- 2.<A[30] ‘30 Bytes’ [MASKGROUPNAME]>
- 3.<A[10] ‘10 Bytes’ [MASKTYPE]>
- 4.<A[40] ‘40 Bytes’ [PPID]>
- 5.<A[3] ‘3 Bytes’ [SLOTNO]> /Mask CST slot number/
- 6.<A[20] ‘20 Byte’ [MASKINSUNITID]> /Evaporation insert sub-unit/
- 7.<A[2] ‘2 Bytes’ [SSLOTNO]> / Evaporation sub-unit Stage number/
- 8.<A[5] ‘5 Bytes’ [MASKMAXCNT]>
- 9.<A[10] ‘10 Bytes’ [OFFSETX]>
- 10.<A[10] ‘10 Bytes’ [OFFSETY]>
- 11.<A[10] ‘10 Bytes’ [OFFSETT]>
- 12.<A[10] ‘10 Bytes’ [MASKMAGNET]>
- 13.<A[10] ‘10 Bytes’ [MASKTHICKNESS]>
- 14.<A[20] ‘20 Bytes’ [PRODID]>
- 15.<A[5] ‘5 Bytes’ [MASKUSECNT]>

※n is Mask count.

Stream	Function	Function Name	Direction	Reply
2	112	Mask cassette information Download EVA ack	H←E	N

Description :**Structure :**

1.<A[1] '1 Bytes' [MCACK]>

Stream	Function	Function Name	Direction	Reply
2	119	Mask offset information Download	H→E	Y

Description :

Mask new offset information Download (EVA and PPA, Light On inspection EQ Only)

Structure :

<L[2]

1.<A[20] '20 Bytes' [UNITID]>

2.<L[2]

1.<A[20] '20 Bytes' [GLSID]>

2.<L[n]

1.<L[8]

1.<A[30] '30 Bytes' [MASKID]>

2.<A[20] '20 Byte' [SUNITID]>

3.<A[2] '2 Bytes' [SSLOTNO]>

4.<A[40] '40 Bytes' [PPID]>

5.<A[10] '10 Bytes' [MASKTHICKNESS]>

6.<A[10] '10 Bytes' [NEWMASKOFFSETX]>

7.<A[10] '10 Bytes' [NEWMASKOFFSETY]>

8.<A[10] '10 Bytes' [NEWMASKOFFSETZ]>

※ n is Mask count.

Stream	Function	Function Name	Direction	Reply
2	120	Mask offset information Download Ack	H←E	N

Description :**Structure :**

1.<A[1] '1 Bytes' [ACK6]>

Stream	Function	Function Name	Direction	Reply
2	121	Job Reservation Command	H→E	Y

Description :

Host send Job reservation command.

Structure :

<L[7]

- 1.<A[20] '20 Bytes' [UNITID]>
- 2.<A[20] '20 Byte' [SUNITID]>
- 3.<A[20] '20 Byte' [SSUNITID]>
- 4.<A[20] '20 Bytes' [LOTID]>
- 5.<A[40] '40 Bytes' [PPID]
- 6.<A[40] '40 Bytes' [GLSQTY]
- 7.<A[40] '40 Bytes' [CMDFLAG]

※ GLSQTY : Glass count(0~28)

※ CMDFLAG : 1 - Reservation

2 - Reservation Cancel

Stream	Function	Function Name	Direction	Reply
2	122	Remind Job Start Signal Reply	H←E	N

Description :

Remind Job Start Signal Reply

Structure :

<L[5]

- 1.<A[20] '20 Bytes' [UNITID]>
- 2.<A[20] '20 Byte' [SUNITID]>
- 3.<A[20] '20 Byte' [SSUNITID]>
- 4.<A[20] '20 Bytes' [LOTID]>
5. <L[n]
 1. <L[3]
 - 1.<A[40] '40 Bytes' [PPID]
 - 2.<A[40] '40 Bytes' [GLSQTY]
 - 3.<A[40] '40 Bytes' [RTCODE]

※ n : Chamber count

※ RTCODE(Return Code) : 0 - No Job Reservation exist

- 1 - Accepted
- 2 - Not Accepted

Stream	Function	Function Name	Direction	Reply
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2	123	Remind Job Start Signal	H→E	Y
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Description :

Host send remind Job start signal.

Structure :

<L[3]

- 1.<A[20] '20 Bytes' [UNITID]>
- 2.<A[20] '20 Byte' [SUNITID]>
- 3.<A[20] '20 Byte' [SSUNITID]>

Stream	Function	Function Name	Direction	Reply
2	124	Remind Job Start Signal Ack	H←E	N

Description :

Remind Job Start Signal Acknowledge

Structure :

<A[1] '1 Byte' [ACK]>

Stream	Function	Function Name	Direction	Reply
2	131	Port PPID Send	H→E	Y

Description :

Host send Port Slot PPID

Structure :

<L[5]

- 1.<A[3] '3 Bytes' [PTID]>
- 2.<A[20] '20 Bytes' [CSTID]>
- 3.<A[3] '3 Bytes' [QTY]>
- 4.<A[26] '26 Bytes' [SLOTSEL]>
- 5.<L[n]
 - 1.<L[2]
 - 1.<A[3] '3 Bytes' [SLOTNO]>
 - 2.<A[40] '40 Bytes' [PPID]>

※ n is Glass count.

Stream	Function	Function Name	Direction	Reply
2	132	Port PPID Send Ack	H←E	N

Description :

Port PPID Send Acknowledge

Structure :

<A[1] '1 Byte' [ACK]>

Stream	Function	Function Name	Direction	Reply
2	203	Send Packing boxID Download	H→E	Y

Description:

Host sends Packing box ID.

Structure :

<L[4]

- 1.<A[20] '20 Bytes' [BOXID]>
- 2.<A[20] '20 Bytes' [PRODID]>
- 3.<A[20] '20 Bytes' [DATE]>
- 4.<A[3] '3 Bytes' [QTY]>

Stream	Function	Function Name	Direction	Reply
2	204	Send Packing box ID Download ack	H←E	N

Description :

Reply for Packing Box Label Information Send.

Structure :

1.<A[1] '1 Bytes' [ACK]>

Stream	Function	Function Name	Direction	Reply
2	211	Mask Eject Request	H→E	Y

Description :

Mask Eject Request

※ TFE Line Special Event

Structure:

<L[2]

- 1.<A[4] '4 Bytes' [DATAID]>

2.<L[2]

1.<L[2]

1.<A[3] '100' [RPTID> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] '1 Byte' [CRST]>

2.<A[1] '1 Byte' [EQST]>

3.<A[4] '4 Byte' [EQSTCODE]>

2.<L[2]

1.<A[3] '341' [RPTID]> /* fix RPTID = 341 */

2.<L[6]

- 1.<A[20] '20 Bytes' [UNITID]>
- 2.<A[20] '20 Bytes' [SUNITID]>
- 3.<A[20] '20 Bytes' [SSUNITID]>
- 4.<A[30] '30 Bytes' [MASKID]>
- 5.<A[40] '40 Bytes' [PPID]>
- 6.<A[2] '2 Byte' [SSLTNO]>

Stream	Function	Function Name	Direction	Reply
2	212	Mask Eject Request reply	H←E	N

Description :

Mask Eject Request reply

※ TFE Line Special Event

Structure :

<A[1] '1 Byte'[ACK]>

Stream	Function	Function Name	Direction	Reply
2	221	Loading Stop	H←E	Y

Description:

This function is use When the buffer or un-loader needs to prevent Glass.

Structure:

<L[5]

1. <A[20] '20 Bytes' [UNITID]>
2. <A[20] '20 Bytes' [SUNITID]>
3. <A[2] '2 Bytes' [SLOTNO]>
4. <A[1] '1 Bytes' [LSST]>
5. <A[1] '1 Bytes' [LSCODE]>

Stream	Function	Function Name	Direction	Reply
2	222	Loading Stop Acknowledge	H→E	N

Description:

Acknowledge or error

Structure:

<A[1] '1 Byte' [ACK]>

Stream	Function	Function Name	Direction	Reply
2	231	Work Order Request	H←E	Y

Description:**Structure:**

<L[3]

1. <A[20] '20 Bytes' [UNITID]> /* EQPID */
2. <A[3] '3 Bytes' [PTID]>
3. <A[20] '20 Bytes' [CRATEID]>

Stream	Function	Function Name	Direction	Reply
2	232	Work Order Reply	H→E	N

Description:**Structure:**

<L[8]

1. <A[20] '20 Bytes' [UNITID]> /* EQPID */
2. <A[3] '3 Bytes' [PTID]>
3. <A[20] '20 Bytes' [CRATEID]>
4. <A[30] '2 Bytes' [WORKORDER]>
5. <A[3] '3 Bytes' [CRATEQTY]>
6. <A[3] '3 Bytes' [CRATEPROCESSEDQTY]>
7. <A[1] '1 Bytes' [WORESULT]>
8. <A[40] '40 Bytes' [WORESULTDESC]>

6.3 Stream 5 Exception Reporting

This stream contains messages regarding binary and analog equipment alarms. The alarms are generated by the equipment in response to changing conditions detected by the equipment.

Stream	Function	Function Name	Direction	Reply
5	1	Alarm Report Send	H←E	Y

Description:

This message reports a change in or presence of an alarm condition. One message will be issued when the alarm is set and one message will be issued when the alarm is cleared. Irrecoverable errors and attention flags may not have a corresponding clear message.

Structure:

<L[7]

- 1.<A[1] ‘1 Byte’ [ALST]>
- 2.<A[1] ‘1 Byte’ [ALCD]>
- 3.<A[10] ‘10 Bytes’ [ALID]>
- 4.<A[80] ‘80 Bytes’ [ALTX]>
- 5.<A[20] ‘20 Bytes’ [UNITID]>
6. <A[20] ‘20 Bytes’ [SUNITID]>
- 7.<L[n]
 - 1.<A[20] ‘20 Bytes’ [GLSID]>

MASK AMHS EQ only

Structure:

<L[6]

- 1.<A[1] ‘1 Byte’ [ALST]>
- 2.<A[1] ‘1 Byte’ [ALCD]>
- 3.<A[10] ‘10 Bytes’ [ALID]>
- 4.<A[80] ‘80 Bytes’ [ALTX]>
- 5.<A[20] ‘20 Bytes’ [UNITID]>
6. <A[20] ‘20 Bytes’ [SUNITID]>
- 7.<L[n]
 - 1.<A[30] ‘30 Bytes’ [MASKID]>

※ n is the count of Glass or Lot those are affected by the alarm.

If equipment can't report Glass ID, then equipment should report Lot ID.

Stream	Function	Function Name	Direction	Reply
5	2	Alarm Report Acknowledge	H→E	N

Description:

Acknowledge or error.

Structure:

<A[1] '1 Byte' [ACKC5]>

Stream	Function	Function Name	Direction	Reply
5	3	Enable/Disable Alarm Send(EAS)	H→E	Y

Description:

This message will change the state of the enable bit in the equipment. The enable bit determines if the alarm will be sent to the host. Alarms which are not controllable in this way are unaffected by this message.

Structure:

<L[3]

- 1.<A[1] '1 Byte' [ALED]>
- 2.<A[20] '20 Bytes' [UNITID]>
- 3.<L[n]
 - 1.<A[10] '10 Bytes' [ALID]>

※ n is the ALID count.

Exception:

A zero-length item(n=0) means all alarms.

Stream	Function	Function Name	Direction	Reply
5	4	Enable/Disable Alarm Acknowledge(EAA)	H←E	N

Description:

Acknowledge or error.

Structure:

<A[1] '1 Byte' [ACKC5]>

Stream	Function	Function Name	Direction	Reply
5	5	List Alarms Data Request(LAR)	H→E	Y

Description:

This message requests the equipment to send binary and analog alarm information to the host.

Structure:

<L[n]

- 1.<L[2]
 - 1.<A[20] '20 Bytes' [UNITID]>
 - 2.<L[m]
 - 1.<A[10] '10 Bytes' [ALID]>

※ n is the UNITID count.

※ m is the ALID count.

Exception:

A zero-length item (n=0) means send all possible alarms regardless of the state of ALED.

A zero-length item (m=0) means send all possible alarms regardless of the state of ALED in the specified UNIT.

Stream	Function	Function Name	Direction	Reply
5	6	List Alarm Data(LAD)	H←E	N

Description:

This message contains the alarm data known to the equipment. There are “m” alarms in the list.

Structure:

<L[n]

1.<L[2]

1.<A[20] ‘20 Bytes’ [UNITID]>

2.<L[m]

1.<L[3]

1.<A[1] ‘1 Byte’ [ALCD]>

2.<A[10] ‘10 Bytes’ [ALID]>

3.<A[80] ‘80 Bytes’ [ALTX]>

※ n is the UNITID count.

※ m is the ALID count.

Exception:

If n=0 or m=0, no response can be made.

A zero-length item returned for ALCDi or ALTXi means that value does not exist.

Stream	Function	Function Name	Direction	Reply
5	103	Current Alarm Set List Request	H→E	Y

Description:

This message requests the equipment to send the information of alarms those are not cleared yet.

Structure:

<L[n]

1.<L[1]

1.<A[20] ‘20 Bytes’ [UNITID]>

※ n is the UNITID count.

※ The order of alarm list should be the latest order.

Exception:

A zero-length list (n=0) means all alarms those are not cleared yet.

Stream	Function	Function Name	Direction	Reply
5	104	Current Alarm Set List Data	H←E	N

Description:

This message contains the information of alarms those are not cleared yet.

Structure:

<L[n]

1.<L[2]

1.<A[20] ‘20 Bytes’ [UNITID]>

2.<L[m]

1.<A[10] ‘10 Bytes’ [ALID]>

※ n is the UNITID count.

※ The order of alarm list should be the latest order.

6.4 Stream 6 Data Collection

This stream is intended to cover the needs of in-process measurements and equipment monitoring.

Stream	Function	Function Name	Direction	Reply
6	1	Trace Data Send	H←E	N

Description:

This function sends samples to the host according to the trace setup done by S2, F23

Structure:

<L[4]

1.<A[2] ‘2 Bytes’ [TRID]> /* The maximum count should be discussed */

2.<A[5] ‘5 Bytes’ [SMPLN]>

3.<A[14] ‘14 Bytes’ [STIME]>

4.<L[m]

1.<L[2]

- 1.<A[5] ‘5 Bytes’ [SVID]>
 - 2.<A[40] ‘40 Bytes’ [SV]>

※ m is reported SV Counts

Exception:

A zero-length STIME means no value is given and that the time is to be derived from SMPLN along with knowledge of the request.

Stream	Function	Function Name	Direction	Reply
6	3	Discrete Variable Data Send	H←E	N

Description:

Any data report which is initiated by an event, such as the completion of a measurement, rather than passage of time is called a discrete variable. Reports requiring only one block of data may report directly to the host with this message.

[CEID = 500,501] Process Data

Structure:

<L[2]

- 1.<A[3] ‘3 Bytes’ [CEID]>
 - 2.<L[9]
 - 1.<A[20] ‘20 Bytes’ [UNITID]> /* CEID=501(Lot Data) → Empty*/
 - 2.<A[20] ‘20 Bytes’ [SUNITID]> /* CEID=501(Lot Data) → Empty*/
 - 3.<A[20] ‘20 Bytes’ [LOTID]>
 - 4.<A[20] ‘20 Bytes’ [CSTID]>
 - 5.<A[20] ‘20 Bytes’ [GLSID]> /* CEID=501 → Empty*/
 - 6.<A[20] ‘20 Bytes’ [OPERID]>
 - 7.<A[20] ‘20 Bytes’ [PRODID]>
 - 8.<A[40] ‘40 Bytes’ [PPID]>
 - 9.<L[n]
 - 1.<L[2]
 - 1.<A[40] ‘40 Bytes’ [DVNAME]>
 - 2.<L[m]
 - 1.<L[2]
 - 1.<A[40] ‘40 Bytes’ [SITENAME]>
 - 2.<A[40] ‘40 Bytes’ [DV]>

※ n is DVNAME count.

※ m is SITENAME count

Remark:

CEID:

500: Glass Process Data

501: Lot Process Data

※ if item value does not exist, item value must be empty.

(※ **The equipment vendor must recommend a list which is structured by Process parameter, result, value, and condition. You can use some sub list if necessary.**)

[CEID = 502] Mask Process Data**Structure:**

<L[2]

1.<A[3] '3 Bytes' [CEID]>

2.<L[9]

1.<A[20] '20 Bytes' [UNITID]>

2.<A[20] '20 Bytes' [SUNITID]>

3.<A[20] '20 Bytes' [LOTID]>

4.<A[20] '20 Bytes' [CSTID]>

5.<A[30] '30 Bytes' [MASKID]>

6.<A[20] '20 Bytes' [OPERID]>

7.<A[20] '20 Bytes' [PRODID]>

8.<A[40] '40 Bytes' [PPID]>

9.<L[n]

1.<L[2]

1.<A[40] '40 Bytes' [DVNAME]>

2.<L[m]

1.<L[2]

1.<A[40] '40 Bytes' [SITENAME]>

2.<A[40] '40 Bytes' [DV]>

※ n is DVNAME count.

※ m is SITENAME count

※ if item value does not exist, item value must be empty.

(※ **The equipment vendor must recommend a list which is structured by Process parameter, result, value, and condition. You can use some sub list if necessary.**)

Stream	Function	Function Name	Direction	Reply
6	4	Discrete Variable Data Acknowledge	H→E	N

Description:

Acknowledge or error.

Structure:

<A[1] ‘1 Byte’ [ACKC6]>

Stream	Function	Function Name	Direction	Reply
6	11	Event Report Send	H←E	Y

Description:

The purpose of this message is for the equipment to send reports to the host upon the occurrence of an event (CEID).

[CEID = 104] Operation mode Status Change

Description: Operation mode change report

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘104’ [RPTID]> /* fix RPTID = 104 */
 - 2.<L[2]
 - 1.<A[2] ‘2 Bytes’ [OPERMODE]>
 - 2.<A[40] ‘40 Byte’ [OPERMODEDESC]>

[CEID = 105] Unit Status Change

Description: Unit status change report

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘105’ [RPTID]> /* fix RPTID = 105 */
 - 2.<L[3]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[1] ‘1 Byte’ [UNITST]>
 - 3.<A[4] ‘4 Byte’ [UNITSTCODE]>

[CEID = 106] Sub-Unit Status Change**Description:** sub-Unit status change report**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘106’ [RPTID]> /* fix RPTID = 106 */
 - 2.<L[4]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[1] ‘1 Byte’ [UNITST]>
 - 3.<A[4] ‘4 Byte’ [UNITSTCODE]>
 - 4.<L[3]
 - 1.<A[20] ‘20 Bytes’ [SUNITID]>

2.<A[1] ‘1 Byte’ [SUNITST]>
3.<A[4] ‘4 Byte’ [SUNITSTCODE]>

[CEID = 107] SSub-Unit Status Change

Description: sub-Unit status change report

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘107’ [RPTID]> /* fix RPTID = 107 */
 - 2.<L[4]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[1] ‘1 Byte’ [UNITST]>
 - 3.<A[4] ‘4 Byte’ [UNITSTCODE]>
 - 4.<L[4]
 - 1.<A[20] ‘20 Bytes’ [SUNITID]>
 - 2.<A[1] ‘1 Byte’ [SUNITST]>
 - 3.<A[4] ‘4 Byte’ [SUNITSTCODE]>
 - 4.<L[3]
 - 1.<A[20] ‘20 Bytes’ [SSUNITID]>
 - 2.<A[1] ‘1 Byte’ [SSUNITST]>
 - 3.<A[4] ‘4 Byte’ [SSUNITSTCODE]>

[CEID = 108] Material State Change

Description: Material state is changed to another state.

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]

1.<L[2]

1.<A[3] '100' [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] '1 Byte' [CRST]>

2.<A[1] '1 Byte' [EQST]>

3.<A[4] '4 Byte' [EQSTCODE]>

2.<L[2]

1.<A[3] '108' [RPTID]> /* fix RPTID = 108 */

2.<L[6]

1.<A[20] '20 Bytes' [UNITID]>

2.<A[30] '30 Byte' [MATERIALTYPE]>

3.<A[30] '30 Bytes' [MATERIALID]>

4.<A[1] '1 Byte' [MATERIALST]>

5.<A[10] '10 Byte' [MATERIALUSEDCNT]>

6.<A[1] '1 Byte' [SLOTPOSITION]>

[CEID = 109] Equipment Constant Change**Description:** One or more equipment constants are changed successfully after an operator or a host tried to change**Structure:**

<L[3]

1.<A[4] '4 Bytes' [DATAID]>

2.<A[3] '3 Bytes' [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] '100' [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] '1 Byte' [CRST]>

2.<A[1] '1 Byte' [EQST]>

3.<A[4] '4 Byte' [EQSTCODE]>

2.<L[2]

1.<A[3] '109'[RPTID]> /* fix RPTID = 109 */

2.<L[n]

1.<L[2]

1.<A[4] '4 Bytes' [ECID]>

2.<A[10] '10 Bytes' [ECV]>

[CEID = 110] Ready To Start**Description:** If Host download CST information doesn't have any fault, Equipment must report this event to host

regardless of transfer possible status.

Structure:

<L[3]>

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]>
 - 1.<L[2]>
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]>
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]>
 - 1.<A[3] ‘110’ [RPTID]> /* fix RPTID = 110 */
 - 2.<L[8]>
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[2] ‘2 Bytes’ [PTTYPE]>
 - 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
 - 4.<A[1] ‘1 Byte’ [TRSMODE]>
 - 5.<A[20] ‘20 Bytes’ [CSTID]>
 - 6.<A[20] ‘20 Bytes’ [LOTID]>
 - 7.<A[26] ‘26 Bytes’ [SLOTMAP]> /*if it is Half Cassette, Empty*/
 - 8.<A[52] ‘52 Bytes’ [HSLOTMAP]> /*if it isn’t Half Cassette, Empty*/

[CEID = 111~114] Control State Change & Equipment Status Change**Description:** Control state is changed report**Structure:**

<L[3]>

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[1]>
 - 1.<L[2]>
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]>
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>

Remark:

CEID:

- 111: Control State Change (OFF-LINE)
- 112: Control State Change (ON-LINE LOCAL)
- 113: Control State Change (ON-LINE REMOTE)
- 114: Equipment Status Change

[CEID = 115] Material List Report**Description:** Material state Report.**Structure:**

<L[3]

- 1.<A[4] '4 Bytes' [DATAID]>
- 2.<A[3] '3 Bytes' [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] '100' [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] '1 Byte' [CRST]>
 - 2.<A[1] '1 Byte' [EQST]>
 - 3.<A[4] '4 Byte' [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] '108' [RPTID]> /* fix RPTID = 108 */
 - 2.<L[n]
 - 1.<L[6]
 - 1.<A[20] '20 Bytes' [UNITID]>
 - 2.<A[30] '30 Byte' [MATERIALTYPE]>
 - 3.<A[30] '30 Bytes' [MATERIALID]>
 - 4.<A[1] '1 Byte' [MATERIALST]>
 - 5.<A[10] '10 Byte' [MATERIALUSEDCNT]>
 - 6.<A[1] '1 Byte' [SLOTPOSITION]>

※ n is Material count.

[CEID = 118] Operator Confirm Event about Operator Call Command**Description:** If any operator confirms about 'Operator Call Command', equipment must report this event to the host.**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[1]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 118 */
 - 2.<L[1]
 - 1.<A[80] ‘80 Byte’ [MESSAGE]>

[CEID = 200 ~ 209] Port Status& Transfer Mode Change**Description:** port status change report**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘200’ [RPTID]> /* fix RPTID = 200 */
 - 2.<L[7]
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[2] ‘2 Bytes’ [PTTYPE]>
 - 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
 - 4.<A[1] ‘1 Byte’ [TRSMODE]>
 - 5.<A[20] ‘20 Bytes’ [CSTID]>
 - 6.<A[26] ‘26 Bytes’ [SLOTMAP]> /*if it is Half Cassette, Empty*/
 - 7.<A[52] ‘52 Bytes’ [HSLOTMAP]> /*if it isn’t Half Cassette, Empty*/

Remark:

CEID(200 ~ 209):

200: Load Request

201: Pre - Load Complete

202: Load Complete

- 203: Unload Request
- 204: Unload Complete
- 205: Port Disable Changed
- 206: Port Enable Changed
- 207: Port Type Changed
- 208: Port Use Type Changed
- 209: Transfer Mode Changed

[CEID = 210~219] Crate Port Status & Transfer Mode Change**Description:****Structure:**

<L[3]>

- 1.<A[4] '4 Bytes' [DATAID]>
- 2.<A[3] '3 Bytes' [CEID]>
- 3.<L[2]>
 - 1.<L[2]>
 - 1.<A[3] '100' [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]>
 - 1.<A[1] '1 Byte' [CRST]>
 - 2.<A[1] '1 Byte' [EQST]>
 - 3.<A[4] '4 Byte' [EQSTCODE]>
 - 2.<L[2]>
 - 1.<A[3] '210' [RPTID]> /* fix RPTID = 210 */
 - 2.<L[9]>
 - 1.<A[3] '3 Bytes' [PTID]>
 - 2.<A[2] '2 Bytes' [PTTYPE]>
 - 3.<A[2] '2 Bytes' [PTUSETYPE]>
 - 4.<A[1] '1 Byte' [TRSMODE]>
 - 5.<A[20] '20 Bytes' [CRATEID]>
 - 6.<A[5] '5 Bytes' [GLSTHK]>
 - 7.<A[1] '1 Bytes' [GLSSIZE]>
 - 8.<A[20] '20 Bytes' [MAKER]>
 - 9.<A[3] '3 Bytes' [CRATEQTY]>

Remark:

- 210: Crate Port Load Request
- 211: Remained Glass Count of Crate Report
- 212: Crate Port Load Complete

- 213: Crate Port Unload Request
- 214: Crate Port Unload Complete
- 215: Crate Port Port Disabled (The Port must be empty before the event happens)
- 216: Crate Port Port Enabled (The Port must be empty before the event happens)
- 217: Crate Port Type Changed
- 218: Crate Port Use Type Changed
- 219: Crate Port Transfer Mode Change (AGV or MGV / Use of Port Type)

[CEID = 220 ~ 229] Mask Cassette Port Status & Transfer Mode Change

Description: Mask Cassette port status change report

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘220’ [RPTID]> /* fix RPTID = 220 */
 - 2.<L[6]
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[2] ‘2 Bytes’ [PTTYPE]>
 - 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
 - 4.<A[1] ‘1 Byte’ [TRSMODE]>
 - 5.<A[20] ‘20 Bytes’ [CSTID]>
 - 6.<A[26] ‘26 Bytes’ [SLOTMAP]>

Remark:

CEID(220 ~ 229):

- 220: Mask Cassette Port Load Request
- 221: Mask Cassette Port Pre - Load Complete
- 222: Mask Cassette Port Load Complete
- 223: Mask Cassette Port Unload Request
- 224: Mask Cassette Port Unload Complete

- 225: Mask Cassette Port Disable Changed
- 226: Mask Cassette Port Enable Changed
- 227: Mask Cassette Port Type Changed
- 228: Mask Cassette Port Use Type Changed
- 229: Mask Cassette Port Transfer Mode Changed

[CEID = 222] Mask Cassette Port Load Complete

Description: Mask cassette port load complete

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘220’ [RPTID]> /* fix RPTID = 220 */
 - 2.<L[7]
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[2] ‘2 Bytes’ [PTTYPE]>
 - 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
 - 4.<A[1] ‘1 Byte’ [TRSMODE]>
 - 5.<A[20] ‘20 Bytes’ [CSTID]>
 - 6.<A[26] ‘26 Bytes’ [SLOTMAP]>
 - 7.<L[n]
 - 1.<L[2]
 - 1.<A[2] ‘2 Bytes’ [SLOTNO]>
 - 2.<A[30] ‘30 Bytes’ [MASKID]>

※ n is the count of Mask

[CEID = 230~237] Tray Port Status & Transfer Mode Change

Description: tray port status change report

Structure:

<L[2]>

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]>

1.<L[2]>

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]>

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]>

1.<A[3] ‘230’ [RPTID]> /* fix RPTID = 230 */

2.<L[6]>

1.<A[3] ‘3 Bytes’ [PTID]>

2.<A[2] ‘2 Bytes’ [PTTYPE]>

3.<A[2] ‘2 Bytes’ [PTUSETYPE]>

4.<A[1] ‘1 Byte’ [TRSMODE]>

5.<A[20] ‘20 Bytes’ [TRAYID]>

6.<A[26] ‘26 Bytes’ [SLOTMAP]>

Remark:

CEID(230 ~ 237):

230: Tray Port Load Request

231: Tray Port Load Complete

232: Tray Port Unload Request

233: Tray Port Unload Complete

234: Tray Port Disable Changed

235: Tray Port Enable Changed

236: Tray Port Type Changed

237: Tray Port Use Type Changed

[CEID = 301~309] Process Status**Description:** Process status change report**Structure:**

<L[3]>

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

1.<A[3] ‘301’ [RPTID]> /* fix RPTID = 301 */

2.<L[6]

1.<A[20] ‘20 Bytes’ [LOTID]>

2.<A[3] ‘3 Bytes’ [PTID]>

3.<A[2] ‘2 Bytes’ [PTTYPE]>

4.<A[2] ‘2 Bytes’ [PTUSETYPE]>

5.<A[20] ‘20 Bytes’ [CSTID]>

6.<A[40] ‘40 Bytes’ [PPID]>

Remark:

CEID(301~309):

301: Process Start

304: Process Cancel

305: Process Abort

306: Process Pause

307: Process Resume

309: Equipment Stop /* Track (EAP) don't use */

[CEID = 311] Last Glass Process Start**Description:** The last glass which is reserved processing is taken from the cassette on a port.**Structure:**

<L[3]

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>
2.<L[2]>
1.<A[3] ‘311’ [RPTID]> /* fix RPTID = 311 */
2.<L[3]>
1.<A[3] ‘3 Bytes’ [PTID]>
2.<A[20] ‘20 Bytes’ [LOTID]>
3.<A[20] ‘20 Bytes’ [GLSID]>

[CEID = 312] Last Mask Process Start

Description: The last mask which is reserved processing is taken from the cassette on a port.

Structure:

<L[3]>

1.<A[4] ‘4 Bytes’ [DATAID]>
2.<A[3] ‘3 Bytes’ [CEID]>
3.<L[2]>
1.<L[2]>
1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
2.<L[3]>
1.<A[1] ‘1 Byte’ [CRST]>
2.<A[1] ‘1 Byte’ [EQST]>
3.<A[4] ‘4 Byte’ [EQSTCODE]>
2.<L[2]>
1.<A[3] ‘312’ [RPTID]> /* fix RPTID = 312 */
2.<L[2]>
1.<A[3] ‘3 Bytes’ [PTID]>
2.<A[30] ‘30 Bytes’ [MASKID]>

[CEID = 321~328] Glass Out/In

Description: Glass move event report

Refer to the PLC Map if the Glass Data Type defined in the PLC Map is B or C.

Structure:

<L[3]>

1.<A[4] ‘4 Bytes’ [DATAID]>
2.<A[3] ‘3 Bytes’ [CEID]>
3.<L[2]>

1.<L[2]

- 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
- 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

- 1.<A[3] ‘321’ [RPTID]> /* fix RPTID = 321 */
- 2.<L[n]
 - 1.<L[19]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[20] ‘20 Bytes’ [SUNITID]>
 - 3.<A[20] ‘20 Bytes’ [SSUNITID]>
 - 4.<A[20] ‘20 Bytes’ [LOTID]>
 - 5.<A[3] ‘3 Bytes’ [IPTID]>
 - 6.<A[3] ‘3 Bytes’ [OPTID]>
 - 7.<A[20] ‘20 Bytes’ [ICSTID]>
 - 8.<A[20] ‘20 Bytes’ [OCSTID]>
 - 9.<A[40] ‘40 Bytes’ [PPID]>
 - 10.<A[3] ‘3 Bytes’ [FSLOTNO]>
 - 11.<A[3] ‘3 Bytes’ [TSLOTNO]>
 - 12.<A[1] ‘1 Bytes’ [FSLOTPOSITION]>
 - 13.<A[1] ‘1 Bytes’ [TSLOTPOSITION]>
 - 14.<A[20] ‘20 Bytes’ [RGLSID]> // VCR Read Glass ID
 - 15.<A[2-] ‘20 Bytes’ [HGLSID]> // Host Download Glass ID
 - 16.<A[1] ‘1 Byte’ [GLSJUDGE]>
 - 17.<A[1] ‘1 Byte’ [GLSGRADE]>
 - 18.<A[2] ‘2 Bytes’ [SSLTNO]>
 - 19.<A[30] ‘30 Bytes’ [MASKID]>
 - 20.<A[1] ‘1 Bytes’ [PROCESSINGFLAG]>

Remark:

CEID:

321:Glass Out By Indexer(Port)

322: Glass In By Indexer(Port)

323: Glass Out By Unit

324: Glass In By Unit

325: Glass Out By Sub-Unit

326: Glass In By Sub-Unit

327: Glass Out By SSub-Unit

328: Glass In By SSub-Unit

※ n is Glass(Panel) count.

[CEID = 329~330 / 338~339] Cassette Out/In Unit / Cassette Out/In Sub-Unit**Description:** Cassette move report**Structure:**

<L[3]

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

1.<A[3] ‘329’ [RPTID]> /* fix RPTID = 329 */

2.<L[8]

1.<A[20] ‘20 Bytes’ [UNITID]>

2.<A[20] ‘20 Bytes’ [SUNITID]>

3.<A[20] ‘20 Bytes’ [LOTID]>

4.<A[1] ‘1 Byte’ [LOTJUDGE]>

5.<A[20] ‘20 Bytes’ [CSTID]>

6.<A[3] ‘3 Bytes’ [IPTID]>

7.<A[3] ‘3 Bytes’ [OPTID]>

8.<A[40] ‘40 Bytes’ [PPID]>

Remark:

CEID:

329: Cassette In By Unit

330: Cassette Out By Unit

338: Cassette In By Sub-Unit

339: Cassette Out By Sub-Unit

[CEID = 331~332] Glass Scrap/ Un-scrap

Description: Glass Scrap

Structure:

<L[3]

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

1.<A[3] ‘331’ [RPTID]> /* fix RPTID = 331 */

2.<L[9]

1.<A[20] ‘20 Bytes’ [UNITID]>

2.<A[20] ‘20 Bytes’ [LOTID]>

3.<A[3] ‘3 Bytes’ [PTID]>

4.<A[20] ‘20 Bytes’ [CSTID]>

5.<A[3] ‘3 Bytes’ [SLOTNO]>

6.<A[1] ‘1 Byte’ [SLOTPOSITION]> /Half Cassette/

7.<A[20] ‘20 Bytes’ [GLSID]>

8.<A[1] ‘1 Byte’ [GLSJUDGE]>

9.<A[5] ‘5 Byte’ [SCRAPCODE]>

Remark:

CEID:

331: Glass Scrap

332: Glass Un-scrap

[CEID = 334] Glass Turn

Description: Glass turn complete report

Structure:

<L[3]

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

- 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
- 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

- 1.<A[3] ‘334’ [RPTID]> /* fix RPTID = 334 */
- 2.<L[8]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[20] ‘20 Bytes’ [LOTID]>
 - 3.<A[3] ‘3 Bytes’ [PTID]>
 - 4.<A[20] ‘20 Bytes’ [CSTID]>
 - 5.<A[3] ‘3 Bytes’ [SLOTNO]>
 - 6.<A[1] ‘1 Byte’ [SLOTPOSITION]> /Half Cassette/
 - 7.<A[20] ‘20 Bytes’ [GLSID]>
 - 8.<A[1] ‘1 Byte’ [GLSJUDGE]>

[CEID = 335 ~ 337] Glass Process Start / Abort / End

Description: The glass which is reserved processing is taken from the unit

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘311’ [RPTID]> /* fix RPTID = 335 */
 - 2.<L[5]
 - 1.<A[20] ‘40 Bytes’ [UNITID]>
 - 2.<A[40] ‘40 Bytes’ [PPID]>
 - 3.<A[20] ‘20 Bytes’ [GLSID]> /* If It is Mask, Empty */
 - 4.<A[30] ‘30 Bytes’ [MASKID]> /* If It is Glass, Empty */

5.<A[14] ‘14 Bytes’ [TIME]>

Remark:

CEID:

335: Glass Process Start

336: Glass Process Abort

337: Glass Process End

[CEID = 341~348] Mask Out/In /* Evaporation, Mask AMHS EQ only */

Description: Mask move event report**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘341’ [RPTID]> /* fix RPTID = 341 */
 - 2.<L[13]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[20] ‘20 Bytes’ [SUNITID]>
 - 3.<A[30] ‘30 Bytes’ [MASKID]>
 - 4.<A[40] ‘40 Bytes’ [PPID]>
 - 5.<A[3] ‘3 Bytes’ [IPTID]>
 - 6.<A[3] ‘3 Bytes’ [OPTID]>
 - 7.<A[20] ‘20 Bytes’ [ICSTID]>
 - 8.<A[20] ‘20 Bytes’ [OCSTID]>
 - 9.<A[3] ‘3 Bytes’ [FSLOTNO]>
 - 10.<A[3] ‘3 Bytes’ [TSLOTNO]>
 - 11.<A[1] ‘1 Bytes’ [FSLOTPOSITION]>
 - 12.<A[1] ‘1 Bytes’ [TSLOTPOSITION]>
 - 13.<A[2] ‘2 Byte’ [SSLOTNO]>

Remark:

CEID:

- 341: Mask Out By Indexer(Port)
- 342: Mask In By Indexer(Port)
- 343: Mask Out By Unit
- 344: Mask In By Unit
- 345: Mask Out By Sub-Unit
- 346: Mask In By Sub-Unit
- 347: Mask In Line
- 348: Mask Out Line

[CEID = 349 ~ 350] Mask Cassette Out/In Sub-Unit /* Evaporation EQ only */**Description:** Mask Cassette move report**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘349’ [RPTID]> /* fix RPTID = 349 */
 - 2.<L[4]
 - 1.<A[20] ‘20 Bytes’ [UNITID]>
 - 2.<A[20] ‘20 Bytes’ [SUNITID]>
 - 3.<A[20] ‘20 Bytes’ [CSTID]>
 - 4.<A[26] ‘26 Bytes’ [SLOTMAP]>

Remark:

CEID(349 ~ 350):

- 349: Mask Cassette In By Sub-Unit
- 350: Mask Cassette Out By Sub-Unit

[CEID = 351 ~ 352] Mask move Shelf /* AMHS EQ only */

Description: Shelf Out/In move report

Structure:

<L[3]

1.<A[4] '4 Bytes' [DATAID]>

2.<A[3] '3 Bytes' [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] '100' [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] '1 Byte' [CRST]>

2.<A[1] '1 Byte' [EQST]>

3.<A[4] '4 Byte' [EQSTCODE]>

2.<L[2]

1.<A[3] '351' [RPTID]> /* fix RPTID = 351 */

2.<L[14]

1.<A[30] '30 Bytes' [MASKID]>

2.<A[10] '10 Bytes' [MASKTYPE]>

3.<A[10] '10 Bytes' [MASKCLNSTATE]> / AMHS EQ only/

4.<A[10] '10 Bytes' [MASKAOISTATE]> / AMHS EQ only/

5.<A[10] '10 Bytes' [MASKREPAIRCNT]> / AMHS EQ only/

6.<A[10] '10 Bytes' [MASKINSPSTATE]> / AMHS EQ only/

7.<A[10] '10 Bytes' [MASKNGCODE]> / AMHS EQ only/

8.<A[10] '10 Bytes' [MASKAMHSZONE]> / AMHS EQ only/

9.<A[10] '10 Bytes' [MASKOFFSETX]>

10.<A[10] '10 Bytes' [MASKOFFSETY]>

11.<A[10] '10 Bytes' [MASKOFFSETT]>

12.<A[10] '10 Bytes' [MASKMAGNET]>

13.<A[10] '10 Bytes' [MASKTHICKNESS]>

14.<A[5] '5 Bytes' [SHELFNO]>

Remark:

CEID(351 ~ 352):

351: Mask into Shelf

352: Mask out from Shelf

[CEID = 360 ~ 361] Tray Move Out / In

Description: Tray move Out/In report

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘360’ [RPTID]> /* fix RPTID = 360 */
 - 2.<L[2]
 - 1.<A[00] ‘20 Bytes’ [TRAYID]>
 - 3.<A[3] ’3 Bytes’ [PTID]>

Remark:

CEID(360 ~ 361):

360: Tray Move Out

361: Tray Move In

[CEID = 362~365] Tray Process End / Abort / Cancel / Start**Description:** Tray process end / abort / cancel / Start report**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘362’ [RPTID]> /* fix RPTID = 362 */

2.<L[8]

- 1.<A[20] '20 Bytes' [LOTID]>
- 2.<A[20] '20 Bytes' [OPERID]>
- 3.<A[20] '20 Bytes' [PRODID]>
- 4.<A[1] '1 Byte' [LOTJUDGE]>
- 5.<A[20] '20 Bytes' [TRAYID]> /*Tray ID*/
- 6.<A[40] '40 Bytes' [PPID]>
- 7.<A[3] '3 Byte' [CELLCOUNT]>
- 8.<L[n]
 - 1.<L[7]
 - 1.<A[3] '3 Bytes' [SLOTNO]>
 - 2.<A[20] '20 Bytes' [GLSID]>
 - 3.<A[40] '40 Bytes' [PPID]>
 - 4.<A[1] '1 Byte' [GLSTYPE]>
 - 5.<A[1] '1 Byte' [GLSIDTYPE]>
 - 6.<A[1] '1 Byte' [GLSJUDGE]>
 - 7.<A[1] '1 Byte' [GLSGRADE]>

※ n is Cell count.

Remark:

CEID(363 ~ 365):

362: Tray Process End (Normal Complete)

363: Tray Process Abort

364: Tray Process Cancel

365: Tray Process Start

[CEID = 366] Batch Tray Process End**Description:** Batch Tray process end report**Structure:**

<L[3]

- 1.<A[4] '4 Bytes' [DATAID]>
- 2.<A[3] '3 Bytes' [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] '100' [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] '1 Byte' [CRST]>
 - 2.<A[1] '1 Byte' [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>
2.<L[2]>
1.<A[3] ‘363’ [RPTID]> /* fix RPTID = 363 */
2.<L[8]>
1.<A[20] ‘20 Bytes’ [LOTID]>
2.<A[20] ‘20 Bytes’ [OPERID]>
3.<A[20] ‘20 Bytes’ [PRODID]>
4.<A[1] ‘1 Byte’ [LOTJUDGE]>
5.<A[20] ‘20 Bytes’ [TRAYID]> /*Cover Tray ID*/
6.<A[40] ‘40 Bytes’ [PPID]>
7.<A[3] ‘3 Byte’ [CELLCOUNT]>
8.<L[n]>
1.<L[3]>
1.<A[20] ‘20 Bytes’ [TRAYID]>
2.<A[40] ‘40 Bytes’ [PPID]>
3.<A[3] ‘3 Byte’ [CELLCOUNT]>

※ n is Tray count.

[CEID = 367~368] Cell In/Out Unit or Port

Description: Cell In/Out Unit or Port Event

Structure:

<L[3]>
1.<A[4] ‘4 Bytes’ [DATAID]>
2.<A[3] ‘3 Bytes’ [CEID]>
3.<L[2]>
1.<L[2]>
1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
2.<L[3]>
1.<A[1] ‘1 Byte’ [CRST]>
2.<A[1] ‘1 Byte’ [EQST]>
3.<A[4] ‘4 Byte’ [EQSTCODE]>
2.<L[2]>
1.<A[3] ‘366’ [RPTID]> /* fix RPTID = 366 */
2.<L[7]>
1.<A[20] ‘20 Bytes’ [UNITID]>
2.<A[20] ‘20 Bytes’ [SUNITID]>
3.<A[20] ‘20 Bytes’ [TRAYID]>

- 4.<A[5] ‘5 Bytes’ [TRAYPOSITIONNO]>
- 5.<A[20] ‘20 Bytes’ [GLSID]>
- 6.<A[1] ‘1 Byte’ [GLSJUDGE]>
- 7.<A[1] ‘1 Byte’ [GLSGRADE]>

Remark:

CEID(367 ~ 368):

367: Cell In Unit or Port

368: Cell Out Unit or Port

[CEID = 369] Tray Information Request

Description: Tray Information Request Event

Structure:

<L[2]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘230’ [RPTID]> /* fix RPTID = 230 */
 - 2.<L[3]
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[20] ‘20 Bytes’ [TRAYID]> /*Cover Tray ID*/
 - 3.<A[26] ‘26 Bytes’ [SLOTMAP]>

[CEID = 370] Cell Information Request

Description: Cell Information Request Event

Structure:

<L[2]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]

1.<L[2]

- 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
- 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

- 1.<A[3] ‘230’ [RPTID]> /* fix RPTID = 230 */
- 2.<L[3]
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[20] ‘20 Bytes’ [TRAYID]>
 - 3.<A[26] ‘26 Bytes’ [SLOTMAP]>

[CEID = 401] Process Program or Recipe Change**Description:****Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘401’ [RPTID]> /* fix RPTID = 401 */
 - 2.<L[5]
 - 1.<A[40] ‘40 Bytes’ [PPID]>
 - 2.<A[1] ‘1 Bytes’ [PPTYPE]>
 - 3.<A[1] ‘1 Byte’ [PPCINFO]>
 - 4.<A[14] ‘14 Bytes’ [LCTIME]>
 - 5.<L[n]
 - 1.<L[5]
 - 1.<A[3] ‘3 Bytes’ [CCODE]>
 - 2.<A[20] ‘20 Bytes’ [RCPSTEP]>

3.<A[20] ‘20 Bytes’ [UNITID]>
4.<A[20] ‘20 Bytes’ [SUNITID]>
5.<L[m]
1.< L[2]
1.<A[40] ‘40 Bytes’ [PPARMNAME]>
2.<A[40] ‘40 Bytes’ [PPARMVALUE]>

※ n is Process Command count.

※ m is Parameter count.

[CEID = 411] Assemble Complete Event

Description: Assemble processing is completed

Structure:

<L[3]

1.<A[4] ‘4 Bytes’ [DATAID]>
2.<A[3] ‘3 Bytes’ [CEID]>
3.<L[3]
1.<L[2]
1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
2.<L[3]
1.<A[1] ‘1 Byte’ [CRST]>
2.<A[1] ‘1 Byte’ [EQST]>
3.<A[4] ‘4 Byte’ [EQSTCODE]>
2.<L[2]
1.<A[3] ‘411’ [RPTID]> /* fix RPTID = 411 (LTPS Glass information) */
2.<L[8]
1.<A[20] ‘20 Bytes’ [UNITID]>
2.<A[20] ‘20 Bytes’ [LOTID]>
3.<A[20] ‘20 Bytes’ [CSTID]>
4.<A[3] ‘3 Bytes’ [SLOTNO]>
5.<A[20] ‘20 Bytes’ [GLSID]>
6.<A[20] ‘20 Bytes’ [RGLSID]>
7.<A[1] ‘1 Byte’ [GLSJUDGE]>
8.<A[1] ‘1 Bytes’ [GLSGRADE]>
3.<L[2]
1.<A[3] ‘413’ [RPTID]> /* fix RPTID = 413 (Encap Glass information) */
2.<L[7]
1.<A[20] ‘20 Bytes’ [PAIRLOTID]>

- 2.<A[20] ‘20 Bytes’ [PAIRCSTID]>
- 3.<A[2] ‘2 Bytes’ [PAIRSLOTNO]>
- 4.<A[20] ‘20 Bytes’ [PAIRGLSID]>
- 5.<A[20] ‘20 Bytes’ [PAIRRGLSID]>
- 6.<A[1] ‘1 Byte’ [PAIRGLSJUDGE]>
- 7.<A[1] ‘1 Bytes’ [PAIRGLSGRADE]>

[CEID = 412] Glass Cut Process

Description: Glass cut process start report

Structure:

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘412’ [RPTID]> /* fix RPTID = 412 */
 - 2.<L[12]
 - 1.<A[3] ‘3 Bytes’ [PTID]>
 - 2.<A[20] ‘20 Bytes’ [CSTID]>
 - 3.<A[20] ‘20 Bytes’ [LOTID]>
 - 4.<A[40] ‘40 Bytes’ [PPID]>
 - 5.<A[20] ‘20 Bytes’ [OPERID]>
 - 6.<A[20] ‘20 Bytes’ [PRODID]>
 - 7.<A[1] ‘1 Byte’ [LOTJUDGE]>
 - 8.<A[3] ‘3 Bytes’ [SLOTNO]>
 - 9.<A[20] ‘20 Bytes’ [GLSID]>
 - 10.<A[1] ‘1 Byte’ [GLSTYPE]>
 - 11.<A[1] ‘1 Byte’ [GLSJUDGE]>
 - 12.<L[n]
 - 1.<L[5]
 - 1.<A[20] ‘20 Bytes’ [CUTGLSID]> /* Cut Glass ID */
 - 2.<A[1] ‘1 Byte’ [CUTGLSJUDGE]> /* Cut Glass judge */

3.<A[1] ‘1 Byte’ [CUTGLSGRADE]> /* Cut Glass grade */
4.<A[2] ‘2 Byte’ [CUTGLSX]> /* Cut Glass X-axis */
5.<A[2] ‘2 Byte’ [CUTGLSY]> /* Cut Glass Y-axis */

※ n is Cut Glass count

[CEID = 431~436] Sorting Job Event**Description:****Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘431’ [RPTID]> /* fix RPTID = 431 */
 - 2.<L[1]
 - 1.<A[20] ‘20 Bytes’ [SORTERJOBID]>

Remark:

CEID

- 431: Sorting Job Process Start
- 432: Sorting Job Process End
- 433: Sorting Job Cancel Begin
- 434: Sorting Job Cancel End
- 435: Sorting Job Abort Begin
- 436: Sorting Job Abort End

[CEID = 440] Material used count change**Description:****Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

1.<A[3] ‘440’ [RPTID]> /* fix RPTID = 440 */

2.<L[n]

1.<L[5]

1.<A[20] ‘20 Bytes’ [UNITID]>

2.<A[30] ‘30 Bytes’ [MATERIALTYPE]>

3.<A[30] ‘30 Bytes’ [MATERIALID]>

4.<A[1] ‘1 Byte’ [MATERIALST]>

5.<A[10] ‘10 Byte’ [MATERIALUSED_CNT]>

※ n is material count.

[CEID = 450] Un-packer Bar Code Data Read**Description:****Structure:**

<L[3]

1.<A[4] ‘4 Bytes’ [DATAID]>

2.<A[3] ‘3 Bytes’ [CEID]>

3.<L[2]

1.<L[2]

1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */

2.<L[3]

1.<A[1] ‘1 Byte’ [CRST]>

2.<A[1] ‘1 Byte’ [EQST]>

3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[2]

1.<A[3] ‘450’ [RPTID]> /* fix RPTID = 450 */

2.<L[5]

1.<A[3] ‘3 Bytes’ [PTID]>

2.<A[2] ‘2 Bytes’ [PTTYPE]>

- 3.<A[2] ‘2 Bytes’ [PTUSETYPE]>
- 4.<A[1] ‘1 Byte’ [TRSMODE]>
- 5.<A[20] ‘20 Bytes’ [BARCODEDEDATA]>

[CEID = 460] VCR Data Read /*For VCR Read only*/**Description:****Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>
 - 2.<L[2]
 - 1.<A[3] ‘460’ [RPTID]> /* fix RPTID = 460 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Bytes’ [VCRSTATUS]>
 - 2.<A[20] ‘20 Bytes’ [GLSID]> /* MES Down GLSID */
 - 2.<A[20] ‘20 Bytes’ [RGLSID]> /* VCR Read GLSID */

[CEID = 701] ReCycle mode Status Change**Description:** Recycle mode change report**Structure:**

<L[3]

- 1.<A[4] ‘4 Bytes’ [DATAID]>
- 2.<A[3] ‘3 Bytes’ [CEID]>
- 3.<L[2]
 - 1.<L[2]
 - 1.<A[3] ‘100’ [RPTID]> /* fix RPTID = 100 */
 - 2.<L[3]
 - 1.<A[1] ‘1 Byte’ [CRST]>
 - 2.<A[1] ‘1 Byte’ [EQST]>
 - 3.<A[4] ‘4 Byte’ [EQSTCODE]>

2.<L[3]

1.<A[3] '701' [RPTID]> /* fix RPTID = 701 */

2.<L[1]

1.<A[1] '1 Byte' [RECYCLEST]>

3.<L[n] / exist cassette list report /

<L[2]

1.<A[3] '3 Bytes' [PTID]>

2.<A[20] '20 Bytes' [CSTID]>

Stream	Function	Function Name	Direction	Reply
6	12	Event Report Acknowledge	H→E	N

Description:

Acknowledge or error.

Structure:

<A[1] '1 Byte' [ACKC6]>

Stream	Function	Function Name	Direction	Reply
6	103	Cassette Information Upload	H←E	Y

Description:

CASSETTE(GLASS) Information Upload

Refer to the PLC Map if the Glass Data Type defined in the PLC Map is B or C.

Format1: Cassette Information Upload (Glass)**Structure:**

<L[11]

1.<A[3] '3 Bytes' [PTID]>

2.<A[2] '2 Byte' [PTUSETYPE]>

3.<A[2] '2 Byte' [PTTYPE]>

4.<A[20] '20 Bytes' [CSTID]>

5.<A[3] '3 Bytes' [QTY]>

6.<A[3] '3 Bytes' [CRATEQTY]>

7.<A[26] '26 Bytes' [SLOTSEL]>

8.<A[26] '26 Bytes' [SLOTMAP]> /*if it is Half Cassette, Empty*/

9.<A[52] '52 Bytes' [HSLOTMAP]> /*if it isn't Half Cassette, Empty*/

10.<A[1] '1 Byte' [CSTENDFLAG]>

11.<L[n]

1.<L[38]

1.<A[20] '20 Bytes' [LOTID]>

2.<A[20] '20 Bytes' [OPERID]>

- 3.<A[20] '20 Bytes' [PRODID]>
- 4.<A[1] '1 Byte' [LOTJUDGE]>
- 5.<A[2] '1 Byte' [GLSST]>
- 6.<A[3] '3 Bytes' [SLOTNO]>
- 7.<A[1] '1 Byte' [SLOTPOSITION]> /Half Cassette/
- 8.<A[20] '20 Bytes' [GLSID]>
- 9.<A[40] '40 Bytes' [PPID]>
- 10.<A[20] '20 Bytes' [RGLSID]>
- 11.<A[1] '1 Byte' [GLSTYPE]>
- 12.<A[1] '1 Byte' [GLSIDTYPE]>
- 13.<A[1] '1 Byte' [GLSJUDGE]>
- 14.<A[1] '1 Byte' [GLSGRADE]>
- 15.<A[2] '2 Bytes' [PAIRSLOTNO]>
- 16.<A[20] '20 Bytes' [PAIRPRODID]>
- 17.<A[20] '20 Bytes'[PAIRPRODTYPE]>
- 18.<A[20] '20 Bytes' [PAIRGLSID]>
- 19.<A[20] '20 Bytes' [PAIRRGLSID]>
- 20.<A[1] '1 Byte' [PAIRGLSJUDGE]>
- 21.<A[1] '1 Byte' [PAIRGLSGRADE]>
- 22.<A[30] '30 Byte' [WORKORDER]>
- 23.<A[20] '20 Bytes' [CRATEID]>
- 24.<A[20] '20 Bytes' [MAKER]>
- 25.<A[5] '5 Bytes' [GLSTHK]>
- 26.<A[1] '1 Byte' [GLSSIZE]>
- 27.<A[1] '1 Byte' [SMPLFLAG]>
- 28.<A[1] '1 Byte' [RWKCNT]>
- 29.<A[4] '4 Bytes' [DUMUSEDCNT]>
- 30.<A[30] '30 Bytes' [MASKID]>
- 31.<L[m]
 - 1.<L[2]
 - 1.<A[20] '20 Bytes'[UNITID]>
 - 2.<L[k]
 - 1.<A[20] '20 Bytes'[SUNITID]>
 - 32.<A[20] '20 Bytes' [PROBERID]>
 - 33.<A[1] '1 Byte' [GCFLAG]> / Evaporation EQ only /
 - 34.<A[6] '6 Bytes' [GCUNIT]> / Evaporation EQ only /
 - 35.<A[1] '1 Byte' [EVASMPLFLAG]> / Evaporation EQ only /
 - 36.<A[800] '800 Bytes'[PANELJUDGE]>
 - 37.<A[800] '800 Bytes'[ARRAYREPAIRTYPE]> / Used at Array Cut Repair /

38.<A[800] '800 Bytes'[LCVDREPAIRTYPE]> / Used at L-CVD Repair /
 39.<A[1] '1 Bytes'[PROCESSINGFLAG]>

※ n is Glass count.

※ m is Unit count.

※ k is SubUnit count.

※ Q is Q-Glass count.

※ P is Panel count.

Stream	Function	Function Name	Direction	Reply
6	104	Cassette Information Upload Ack.	H→E	N

Description:

Acknowledge Cassette Data Upload or error.

Structure:

<A[1] '1 Byte' [ACK]>

Stream	Function	Function Name	Direction	Reply
6	109	Mask cassette information Upload	H←E	Y

Description :

Mask Cassette slot information Upload

Structure :

<L[9]

- 1.<A[3] '3 Bytes' [PTID]>
- 2.<A[2] '2 Bytes' [PTTYPE]>
- 3.<A[2] '2 Bytes' [PTUSETYPE]>
- 4.<A[20] '20 Bytes' [CSTID]>
- 5.<A[20] '20 Bytes' [UNITID]>
- 6.<A[20] '20 Byte' [SUNITID]>
- 7.<A[1] '1 Byte' [MASKCSTTYPE]>
- 8.<A[1] '1 Byte' [CSTENDFLAG]>
- 9.<L[n]
 - 1.<L[18]
 - 1.<A[30] '30 Bytes' [MASKID]>
 - 2.<A[30] '30 Bytes' [MASKGROUPNAME]>
 - 3.<A[10] '10 Bytes' [MASKTYPE]>
 - 4.<A[40] '40 Bytes' [PPID]>
 - 5.<A[3] '3 Bytes' [SLOTNO]> / Mask CST slot number/

- 6.<A[20] '20 Byte' [MASKINSUNITID]> / insert sub-unit/
 7.<A[2] '2 Bytes' [SSLOTNO]> / sub-unit Stage number
 8.<A[5] '5 Bytes' [MASKMAXCNT]>
 9.<A[5] '5 Bytes' [MASKUSECNT]>
 10.<A[10] '10 Bytes' [OFFSETX]>
 11.<A[10] '10 Bytes' [OFFSETY]>
 12.<A[10] '10 Bytes' [OFFSETT]>
 13.<A[10] '10 Bytes' [MASKMAGNET]>
 14.<A[10] '10 Bytes' [MASKTHICKNESS]>
 15.<A[20] '20 Bytes' [PRODID]>
 16.<A[30] '30 Bytes' [MASKSPEC]>
 17.<A[30] '30 Bytes' [SPARE1]> item not fix
 18.<A[30] '30 Bytes' [SPARE2]> item not fix

※ n is Mask count.

Stream	Function	Function Name	Direction	Reply
6	110	Mask cassette information Upload Ack	H→E	N

Description :

Structure :

- 1.<A[1] '1 Bytes' [ACK]>

Stream	Function	Function Name	Direction	Reply
6	119	Mask offset information Upload	H←E	Y

Description :

Mask new offset information Upload (EVA and PPA, Light On inspection EQ Only)

Structure :

<L[2]

- 1.<A[20] '20 Bytes' [UNITID]>
 2.<L[2]
 1.<A[20] '20 Bytes' [GLSID]>
 2.<L[n]
 1.<L[8]
 1.<A[30] '30 Bytes' [MASKID]>
 2.<A[20] '20 Byte' [SUNITID]>
 3.<A[2] '2 Bytes' [SSLOTNO]>
 4.<A[40] '40 Bytes' [PPID]>

- 5.<A[10] '10 Bytes' [MASKTHICKNESS]>
 6.<A[10] '10 Bytes' [NEWMASKOFFSETX]>
 7.<A[10] '10 Bytes' [NEWMASKOFFSETY]>
 8.<A[10] '10 Bytes' [NEWMASKOFFSETZ]>

※ n is Mask count.

Stream	Function	Function Name	Direction	Reply
6	120	Mask offset information Upload Ack	H→E	N

Description :

Structure :

- 1.<A[1] '1 Bytes' [ACK6]>

Stream	Function	Function Name	Direction	Reply
6	121	Job Reservation Reset Request	H←E	Y

Description :

Host send Job reservation command.

Structure :

<L[7]

- 1.< A[20] '20 Bytes' [UNITID]>
 2.< A[20] '20 Byte' [SUNITID]>
 3.< A[20] '20 Byte' [SSUNITID]>
 4.<A[20] '20 Bytes' [LOTID]>
 5.<A[40] '40 Bytes' [PPID]
 6.<A[40] '40 Bytes' [GLSQTY]
 7.<A[40] '40 Bytes' [CMDFLAG]

※ GLSQTY : Glass count(0~28)

※ CMDFLAG : 1 - Reservation

2 - Reservation Cancel

Stream	Function	Function Name	Direction	Reply
6	122	Job Reservation Reset Request Ack	H→E	N

Description :

Remind Job Start Signal Acknowledge

Structure :

<A[1] '1 Byte' [ACK]>

Stream	Function	Function Name	Direction	Reply
6	131	Glass Call Data Request	H←E	Y

Description :

Host send Glass Call Data Request

Structure :

<L[4]

- 1.<A[20] '20 Bytes' [UNITID]>
- 2.<A[20] '20 Byte' [SUNITID]>
- 3.<A[20] '20 Byte' [SSUNITID]>
- 4.<A[40] '40 Bytes' [PPID]>

※ n is Glass count.

Stream	Function	Function Name	Direction	Reply
6	132	Glass Call Data Request Ack	H→E	N

Description :

Glass Call Data Request Acknowledge

Structure :

<A[1] '1 Byte' [ACK]>

Stream	Function	Function Name	Direction	Reply
6	203	Packing box information upload	H←E	Y

Description :

Packing box slot information upload

Structure :

<L[4]

- 1.< A[20] '20 Bytes' [BOXID]>
- 2.<A[20] '20 Bytes' [PRODID]>
- 3.<A[3] '3 Bytes' [QTY]>
- 4.<L[n]
 - 1.<L[5]
 - 1.<A[20] '20 Bytes' [GLSID]>
 - 2.<A[20] '20 Bytes' [LOTID]>
 - 3.<A[20] '20 Bytes' [RGLSID]>
 - 4.<A[1] '1 Bytes' [GLSJUDGE]>

5.<A[1] '1 Bytes' [GLSGRADE]>

※ n is Glass count.

Stream	Function	Function Name	Direction	Reply
6	204	Packing box information upload reply	H→E	Y

Description :

Packing box information upload reply

Structure :

<A[1] '1 Byte'[ACK]>

6.5 Stream 7 Process Program Management

The functions in this stream are used to manage and transfer process programs. Process programs are the equipment-specific descriptions that determine the procedure to be conducted on the material by a single piece of equipment. Methods are provided to transfer programs as well as establish the link between the process program and the material to be processed with that program.

Stream	Function	Function Name	Direction	Reply
7	19	Current EPPD Request	H→E	Y

Description:

This message is used to request Equipment Process Program Directory. This is a list of all the PPIDs of the process program stored in the equipment.

Structure:

<L, 2

1.<A[20] '20 Bytes' [UNITID]> /* EQPID or Unit-ID or Sub Unit-ID */

2.<A[1] '1 Byte' [PPTYPE]>

Stream	Function	Function Name	Direction	Reply
7	20	Current EPPD Data	H←E	N

Description:

This message is used to transmit the current PPID.

Structure:

<L, 3

1.<A[20] '20 Bytes' [UNITID]> /* EQPID or Unit-ID or Sub Unit-ID or Sub-Sub Unit-ID */

2.<A[1] '1 Byte' [PPTYPE]>

3.<L[n]

1. <A[40] '40 Bytes' [PPID]>

※ n is PPID count.

Exception:

A zero-length list means that no item stored in the equipment.

Stream	Function	Function Name	Direction	Reply
7	23	Formatted Process Program Send	H→E	Y

Description :

This message allows movement of formatted process programs from host to equipment.

Structure:

<L[6]

- 1.<A[40] '40 Bytes' [PPID]>
- 2.<A[1] '1 Byte' [PPTYPE]>
 - 3.<A[6] '6 Bytes' [MDLN]>
 - 4.<A[6] '6 Bytes' [SOFTREV]>
 - 5.<A[14] '14 Bytes' [LCTIME]>
- 6.<L[n]

1.<L[6]

- 1.<A[3] '3 Bytes' [CCODE]>
 - 2.<A[20] '20 Bytes' [RCPSTEP]>
 - 3.<A[20] '20 Bytes' [UNITID]>
 - 4.<A[20] '20 Bytes' [SUNITID]>
 - 5.<A[20] '20 Bytes' [SSUNITID]>
 - 6.<L[m]
- 1.<L[2]
- 1.<A[40] '40 Bytes' [PPARMNAME]>
 - 2.<A[40] '40 Bytes' [PPARMVALUE]>

※ n is Process Command count.

※ m is Parameter count.

If PPTYPE value is "E", PPARMNAME should be "SUBUNITRECIPE" or "UNITRECIPE".

Stream	Function	Function Name	Direction	Reply
7	24	Formatted Process Program Acknowledge	H←E	N

Description :

Acknowledge or error.

Structure :

<A[1] '1 Byte' [ACKC7]>

Stream	Function	Function Name	Direction	Reply
7	25	Formatted Process Program Request	H→E	Y

Description:

This message is used only by host to request a particular process program from the equipment.

This message also will be used to verify that the host's recipe likes to the equipment's.

Structure:

<L[5]

1. <A[40] '40 Bytes' [PPID]>
2. <A[20] '20 Bytes' [UNITID]>
3. <A[20] '20 Bytes' [SUNITID]>
4. <A[20] '20 Bytes' [SSUNITID]>
5. <A[1] '1 Byte' [PPTYPE]>

Stream	Function	Function Name	Direction	Reply
7	26	Formatted Process Program Data	H←E	N

Description:

This message transfers a process program in response to a request for the PPID. The value of LCTIME is obtained from the last modification (or Creation) date and time.

Structure:

<L[6]

- 1.<A[40] '40 Bytes' [PPID]>
- 2.<A[1] '1 Byte' [PPTYPE]>
- 3.<A[6] '6 Bytes' [MDLN]>
- 4.<A[6] '6 Bytes' [SOFTREV]>
- 5.<A[14] '14 Bytes' [LCTIME]>
- 6.<L[n]
 - 1.<L[6]
 - 1.<A[3] '3 Bytes' [CCODE]>
 - 2.<A[20] '20 Bytes' [RCPSTEP]>
 - 3.<A[20] '20 Bytes' [UNITID]>
 - 4.<A[20] '20 Bytes' [SUNITID]>

5.<A[20] '20 Bytes' [SSUNITID]>
 6.<L[m]
 1.<L[2]
 1.<A[40] '40 Bytes' [PPARMNAME]>
 2.<A[40] '40 Bytes' [PPARMVALUE]>

※ n is Process Command count.

※ m is Parameter count.

(※ If it's not fit to the upper message structure, the equipment vendor must recommend a list which is structured by recipe setting parameter, value and condition. You can use some sub PPID and sub LCTIME If necessary.)

If PPTYPE value is "E", PPARMNAME should be "SUBUNITRECIPE" or "UNITRECIPE".

Exception:

If a zero-length list indicates the request was denied. (the recipe does not exist)

Stream	Function	Function Name	Direction	Reply
7	73	Recipe ID Check	H→E	Y

Description:

This function is for check the Recipe ID that is registered or not.

Structure:

<L[2]

1. <A[20] '20 Bytes' [UNITID]>
- 2.L[n]
 - 1.L[3]
 - 1.<A[40] '40 Bytes' [PPID]>
 - 2.<A[1] '1 Byte' [PPTYPE]>
 - 3.<A[14] '14 Bytes' [LCTIME]>

Stream	Function	Function Name	Direction	Reply
7	74	Recipe ID Check Acknowledge	H←E	N

Description:

Acknowledge or error

Structure:

<A[1] '1 Byte' [ACKC8]>

6.6 Stream 9 System Errors

This stream provides a method of informing the host that a message block has been received which cannot be handled or that a timeout on a transaction (receive) timer has occurred. The messages indicate either a Message Fault or a Communications Fault has occurred but do not indicate a Communications Failure has occurred.

Communications Failure – A Communications Failure occurs in a SECS-I environment when, and only when, the RTY limit is exceeded. Note: In the event of a Communications Failure, no Stream 9 message is sent.

Communications Fault – A Communications Fault occurs when the equipment does not receive an expected message (when a transaction timer or a conversation timer has expired).

Message Fault – A message Fault occurs when the equipment receives a message which it cannot process because of a fault that arises from the content, context, or length of the message.

Stream	Function	Function Name	Direction	Reply
9	1	Unrecognized Device ID	H←E	N

Description:

The device ID in the message block header did not correspond to any known device ID in the node detecting the error.

Structure:

<MHEAD>

Stream	Function	Function Name	Direction	Reply
9	3	Unrecognized Stream Type	H←E	N

Description:

The equipment does not recognize the stream type in the message block header.

Structure:

<MHEAD>

Stream	Function	Function Name	Direction	Reply
9	5	Unrecognized Function Type	H←E	N

Description :

This message indicates that the function in the message ID is not recognized by receiver.

Structure:

<MHEAD>

Stream	Function	Function Name	Direction	Reply
9	7	Illegal Data	H←E	N

Description:

This message indicates that the stream and function were recognized, but the associated data format could not be interpreted.

Structure:

<MHEAD>

Stream	Function	Function Name	Direction	Reply
9	9	Transaction Timer Timeout	H←E	N

Description:

This message indicates that a transaction (receive) timer has timed out and that the corresponding transaction has been aborted. It is up to the host to respond to this error in an appropriate manner to keep the system operational.

Structure:

<SHEAD>

Stream	Function	Function Name	Direction	Reply
9	13	Conversation Timeout	H←E	N

Description:

Data were expected but none were received within a reasonable length of time. Resources have been cleared.

Structure:

<L[2]

- 1.<A[6] ‘6 Bytes’ [MEXP]> “Message Expected SxFyy or SxxFy”
- 2.<A[6] ‘6 Bytes’ [EDID]> “Expected Data Identification”

6.7 Stream 10 Terminal Services

The functions of this stream are to pass textual messages between operator terminals attached to processing and/or testing equipment and the host. The equipment makes no attempt to interpret the text of the message, but merely passes it from terminal keyboard to the host or from the host to the display of the terminal. Management of human response times to information displayed on terminals is the responsibility of the host.

Stream	Function	Function Name	Direction	Reply

10	1	Terminal Request	H←E	Y
----	---	------------------	-----	---

Description:

A terminal text message to the host.

Structure:

<L[2]

- 1.<A[2] ‘2 Bytes’ [TID]>
- 2.<A[120] ‘120 Bytes’ [TEXT]>

Stream	Function	Function Name	Direction	Reply
10	2	Terminal Request Acknowledge	H→E	N

Description:

Acknowledge or error.

Structure:

<A[1] ‘1 Byte’ [ACKC10]>

Stream	Function	Function Name	Direction	Reply
10	5	Terminal Display, Multi-block	H→E	Y

Description:

Data to be displayed on the equipment’s terminal.

Structure:

<L[2]

- 1.<A[2] ‘2 Bytes’ [TID]>
2. L[n]
 - 1.<A[120] ‘120 Bytes’ [TEXT]>

※ The maximum number of n is 10.

Stream	Function	Function Name	Direction	Reply
10	6	Terminal Display, Multi-block Ack.	H←E	N

Description:

Acknowledge or error.

Structure:

<A[1] ‘1 Byte’ [ACKC10]>

7 MESSAGE SCENARIOS

The following scenarios demonstrate a possible sequence of messages when the Equipment is in a specific operational state. They are not the only sequence. A number of uncertain conditions effect the sequences.

7.1 Initialize Scenario

7.1.1 Online Scenario (Offline -> Online by Unit):

Host		Equipment	
Operator actuates Online switch when Unit offline state is active			
		← S1F13	Establish Communication Request
COMMACK=0	S1F14→		
		← S1F1	Are You There Request
[IF] Host accepts Online [THEN] Host grants Online [ELSE] Host denies Online	S1F2→ S1F0→		
		[IF] Host denies Online [THEN] Keep original mode [ELSE] Control State Change (ON-LINE REMOTE)	
		← S6F11 (113)	Control State Change (ON-LINE REMOTE) (Offline -> Online/Remote)
Host reply ACK	S1F12→		
		← S2F17	Date and Time Request
Date and Time Data	S1F18→		
		← S1F5	Formatted Status Request(FSR)
Formatted Status Data	S1F6→		
		← S6F11 (114)	Equipment Status Change
Host reply ACK	S1F12→		
If the Unit manages the material			
		← S6F11 (108)	Material State Change
Host reply ACK	S1F12→		

7.1.2 Offline Scenario (Online -> Offline by Unit):

Host		Equipment	
Operator actuates Offline switch when Unit Online state is active			

		← S6F11 (111)	Control State Change (OFF-LINE) (Online -> Offline)
Host reply ACK	S1F12→		
If Host reply ACK=0, Equipment turns control mode to Offline Mode,			
If Host reply ACK<>0 or host no response, Equipment still change to Offline			

7.1.3 Online Scenario (Offline -> Online by Host):

Host		Equipment	
Host can query Equipment Control Status Offline state to Online by option setting			
Establish Communication Request	S1F13→	← S1F14	COMMACK=0
Request ON-LINE	S1F17→	← S1F18	Online Acknowledge
		← S6F11 (113)	Control State Change (ON-LINE REMOTE)
Host reply ACK	S1F12→	← S1F17	Date and Time Request
Date and Time Data	S1F18→	← S1F5	Formatted Status Request(FSR)
Formatted Status Data	S1F6→	← S6F11 (114)	Report Equipment Status Change
Host reply ACK	S1F12→	← S6F11 (108)	Report Material State Change
If the Unit manages the material			
Host reply ACK	S1F12→		

7.1.4 Offline Scenario (Online -> Offline by Host):

Host		Equipment	
Host can query Equipment Control Status Online state to Offline by option setting			
Request OFF-LINE	S1F15→	← S1F0	[IF] Equipment is OFF-LINE
		← S1F16	[THEN] Equipment denies requests
			[ELSE] Equipment is ON-LINE
		← S6F11 (111)	Control State Change (OFF-LINE) (Online -> Offline)
Host reply ACK	S1F12→		

7.2 Data Collection

[Event Data Collection]

7.2.1 Equipment reports an event:

Host		Equipment	
		← S6F11	Equipment sends Event Report
Acknowledge	S6F12 →		

[Process Data Collection]

7.2.2 Equipment reports Glass data or Lot data or Mask data for processed result:

Host		Equipment	
If a glass or lot processing is ended			
		← S6F3	Discrete Variable Data Send
Discrete Variable Data Ack.	S6F4 →		

[Trace Data Collection]

7.2.3 Host Initiates Trace Report:

Host		Equipment	
Host requests Trace Data initialization	S2F23 →		
		← S2F24	Acknowledge, trace initiated [DO] TOTSMP REPGSZ times [DO] REPGSZ many times: collect SVID1, SVID2, ..., SVIDn data and delay time by DSPER. [END_DO]
		← S6F1	Send SV1, SV2, ..., SVn [END_DO]
Additional : Request trace termination prior to completion (TOTSMP = 0)	S2F23 →		
		← S2F24	Acknowledge premature termination

[Variable Data Collection]

7.2.4 Host requests the value of Status Variables (SV):

Host		Equipment	
Selected Equipment Status Request	S1F3 →		

	← S1F4	Selected Equipment Status Data
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[Status Data Collection]

7.2.5 Host requests the formatted status:

Host		Equipment	
Formatted Status Request	S1F5→		
		← S1F6	Formatted Status Data

[Equipment Constants Data Collection]

7.2.6 Host requests the new value of Equipment Constants Variables (ECV):

Host		Equipment	
Equipment Constants Request	S2F13 →		
		← S2F14	Equipment Constants Data

7.2.7 Host sends Equipments Constants:

Host		Equipment	
New Equipment Constants Send	S2F15 →		
		← S2F16	EAC = 0 equipment sets constants
		← S6F11	Equipment Constant Change(CEID=109)
Acknowledge	S6F12 →		

[Event Enable/ Disable]

7.2.8 Host requests Enable or Disable Events:

Host		Equipment	
Enable or Disable Event Report	S2F37 →		
		← S2F38	Enable or Disable Event Report Ack.

[If the equipment receives disable(or enable) command from the host, the selected event should not report (should report) to the host]

7.2.9 Equipment Constants Change by Operator:

Host		Equipment	
		← S6F11	Equipment Constant Change(CEID=109)
Acknowledge	S6F12 →		

7.3 Remote Control

7.3.1 Host Command Send Scenario:

Host		Equipment	
Host Command		S2F41 →	
		← S2F42	Host Command Acknowledge [IF] Command Accepted (HCACK = 0) [THEN]
		← S6F11	Event Report-state change or other collection event occurrence.
Acknowledge		S6F12 →	

7.4 Cassette Information Download

7.4.1 Cassette Information Download:

Host		Equipment	
Cassette Information Download		S2F103 →	
		← S2F104	Acknowledge

7.5 Alarm Management

7.5.1 Enable/Disable Alarms:

Host		Equipment	
Enable/disable Alarm		S5F3 →	
		← S5F4	Acknowledge

7.5.2 Send Alarm Report:

Host		Equipment	
Alarm occurrence detected by the equipment.			
		← S5F1	Send alarm report
Acknowledge		S5F2 →	

7.5.3 Alarm List Request:

Host		Equipment	
Host want to know equipment not cleared alarm list.			

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Alarm List Request	S5F103 →	
	← S5F104	Alarm List Data

7.5.4 List Alarms Data Request(LAR)

Host	Equipment
This message requests the equipment to send binary and analog alarm information to the host.	
List Alarms Data Request	S5F5 →
	← S5F6
	List Alarms Data

7.6 Process Program (Recipe) Management

7.6.1 Host Attempts to Process Program Directory Request:

Host	Equipment
Current EPPD Request	S7F19 →
	← S7F20
	Current EPPD Data (List)

7.6.2 Process Program is changed(created/edited/deleted) by Operator:

Host	Equipment
	← S6F11
	Process Program or Recipe Change (CEID=401)
Acknowledge	S6F12 →
[if Process program is created or edited]	
Formatted Process Program Request	S7F25 →
	← S7F26
	Formatted Process Program Data

7.7 Clock

7.7.1 Equipment Requests TIME:

Host	Equipment
	← S2F17
Host replies its internal time.	S2F18 →
	[Equipment should change Time. If Time is zero-length item, equipment should not change time.]

7.7.2 Host Instructs Equipment to Set Time:

Host	Equipment
Host instructs equipment to set its time.	S2F31 →
	← S2F32

7.8 Error Message

7.8.1 Message or Communication Fault:

Host	Equipment
Host sends a message	SxFy→
	← S9Fz

7.9 Equipment Terminal Service

7.9.1 Operator sends information to the host:

Host	Equipment
	← S10F1
Host acknowledges receipt of operator initiated message	S10F2 →

7.9.2 Host sends a multi-Block display message:

Host	Equipment
Send Information	S10F5→
	← S10F6

8 OPERATION SCENARIOS

8.1 Normal Sequence

8.1.1 ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
		The port is empty	
Acknowledge	S6F12 →	← S6F11	CST Load Request (CEID=200)
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		← S6F11	CST Load Complete (CEID=202)
Acknowledge	S6F12 →		
Cassette Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		If the cassette information is valid, the equipment must report the 'Ready to Start' event to host regardless of transfer possible status.	
		← S6F11	Ready To Start (CEID=110)
Acknowledge	S6F12 →		
Remote Command(Process Start)	S2F41 →	← S2F42	Acknowledge
			When the equipment starts the process of the cassette.
		← S6F11	Process Start(CEID=301)
Acknowledge	S6F12 →		
First(1 st) Glass Flow			
		← S6F11	Glass Out By Indexer (CEID=321) First(1 st) glass
Acknowledge	S6F12 →		
		← S6F11	Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event
		← S6F11	Glass In By Unit (CEID=324) First(1 st) glass
Acknowledge	S6F12 →	← S6F11	Glass Process Start (CEID=335) First(1 st) glass

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		
		Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event	← S6F11 Glass In By Sub-Unit (CEID=326) First(1st) glass
Acknowledge	S6F12 →	In processing...	
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event	← S6F11 Glass Out By Sub-Unit (CEID=325) First(1st) glass
Acknowledge	S6F12 →		
		← S6F11 Glass Process End (CEID=337) First(1st) glass	
Acknowledge	S6F12 →		
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event	← S6F11 Glass Out By Unit (CEID=323) First(1st) glass
Acknowledge	S6F12 →		
		Whenever a glass processing is end, the equipment sends the glass data.	← S6F3 First(1st) glass data(CEID 500)
Acknowledge	S6F4 →		
		← S6F11 Glass In By Indexer (CEID=322) First(1st) glass	
Acknowledge	S6F12 →		
		(n-1)th Glass Flow	
		← S6F11 Glass Out By Indexer (CEID=321) (n-1)th glass	
Acknowledge	S6F12 →		
		Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event	← S6F11 Glass In By Unit (CEID=324) (n-1)th glass
Acknowledge	S6F12 →		
		← S6F11 Glass Process Start (CEID=335)	

Contents	Host	Equipment	Contents
			(n-1) th glass
Acknowledge	S6F12 →		
			Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event
		← S6F11	Glass In By Sub-Unit (CEID=326) (n-1) th glass
Acknowledge	S6F12 →		
		In processing...	
			Whenever a glass is moved out to next unit, the equipment sends the Component Out Event
		← S6F11	Glass Out By Sub-Unit (CEID=325) (n-1) th glass
Acknowledge	S6F12 →		
		← S6F11	Glass Process End (CEID=337) (n-1) th glass
Acknowledge	S6F12 →		
			Whenever a glass is moved out to next unit, the equipment sends the Component Out Event
		← S6F11	Glass Out By Unit (CEID=323) (n-1) th glass
Acknowledge	S6F12 →		
			Whenever a glass processing is end, the equipment sends the glass data.
		← S6F3	(n-1) th glass data(CEID 500)
Acknowledge	S6F4 →		
		← S6F11	Glass In By Indexer (CEID=322) (n-1) th glass
Acknowledge	S6F12 →		
Last(n th) Glass Flow			
			When the last glass processing is started, report the event
		← S6F11	Last(n th) Glass Started
Acknowledge	S6F12 →		
		← S6F11	Glass Out By Indexer (CEID=321) Last(n th) glass
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents	
		Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event		
	← S6F11	Glass In By Unit (CEID=324) Last(n th) glass		
Acknowledge	S6F12 →			
	← S6F11	Glass Process Start (CEID=335) Last(n th) glass		
Acknowledge	S6F12 →			
	← S6F11	Glass In By Sub-Unit (CEID=326) Last(n th) glass		
Acknowledge	S6F12 →			
In processing...				
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event		
	← S6F11	Glass Out By Sub-Unit (CEID=325) Last(n th) glass		
Acknowledge	S6F12 →			
	← S6F11	Glass Process End (CEID=337) Last(n th) glass		
Acknowledge	S6F12 →			
	← S6F11	Glass Out By Unit (CEID=323) Last(n th) glass		
Acknowledge	S6F12 →			
		Whenever a glass processing is end, the equipment sends the glass data.		
	← S6F3	Last(n th) glass data(CEID 500)		
Acknowledge	S6F4 →			
	← S6F3	Lot data Summary(CEID=501)		
Acknowledge	S6F4 →			
	← S6F11	Glass In By Indexer (CEID=322) Last(n th) glass		
Acknowledge	S6F12 →			
	← S6F103	Cassette Information Upload		
Acknowledge	S6F104 →			

Contents	Host	Equipment	Contents	
		CST is unloaded on the port by AGV, MGV or Crane.		
		← S6F11	CST Unload Request(CEID=203)	
Acknowledge	S6F12 →			
		The port is empty		
		← S6F11	CST Unload Complete(CEID=204)	
Acknowledge	S6F12 →			

8.1.2 ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	CST Load Request (CEID=200)	
Acknowledge	S6F12 →			
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on		
		← S6F11	CST Load Complete (CEID=202)	
Acknowledge	S6F12 →			
Cassette Information Download	S2F103 →	If the verification result of cassette info is valid,		
		← S2F104	Acknowledge	
		After modification(or not) for the cassette information, the operator should confirm it.		
		The operator pushes the Start Button for processing the cassette.		
		← S6F11	Process Start(CEID=301)	
Acknowledge	S6F12 →			
First(1st) Glass Flow				
		← S6F11	Glass Out By Indexer (CEID=321) First(1 st) glass	
Acknowledge	S6F12 →			
		Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event		
		← S6F11	Glass In By Unit (CEID=324) First(1 st) glass	
Acknowledge	S6F12 →			
		← S6F11	Glass Process Start (CEID=335) First(1 st) glass	
Acknowledge	S6F12 →			

Contents	Host	Equipment	Contents
		Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event	
Acknowledge	S6F12 →	← S6F11	Glass In By Sub-Unit (CEID=326) First(1 st) glass
In processing...			
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event	
Acknowledge	S6F12 →	← S6F11	Glass Out By Sub-Unit (CEID=325) First(1 st) glass
		← S6F11	Glass Process End (CEID=337) First(1 st) glass
Acknowledge	S6F12 →		
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event	
Acknowledge	S6F12 →	← S6F11	Glass Out By Unit (CEID=323) First(1 st) glass
Acknowledge	S6F12 →		
		Whenever a glass processing is end, the equipment sends the glass data.	
Acknowledge	S6F4 →	← S6F3	First(1 st) glass data(CEID 500)
Acknowledge	S6F12 →	← S6F11	Glass In By Indexer (CEID=322) First(1 st) glass
(n-1) th Glass Flow			
		← S6F11	Glass Out By Indexer (CEID=321) (n-1) th glass
Acknowledge	S6F12 →		
		Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event	
Acknowledge	S6F12 →	← S6F11	Glass In By Unit (CEID=324) (n-1) th glass
Acknowledge	S6F12 →		
		← S6F11	Glass Process Start (CEID=335) (n-1) th glass

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		
		Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event	← S6F11 Glass In By Sub-Unit (CEID=326) (n-1)th glass
Acknowledge	S6F12 →	In processing...	
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event	← S6F11 Glass Out By Sub-Unit (CEID=325) (n-1)th glass
Acknowledge	S6F12 →		
		← S6F11 Glass Process End (CEID=337) (n-1)th glass	
Acknowledge	S6F12 →		
		Whenever a glass is moved out to next unit, the equipment sends the Component Out Event	← S6F11 Glass Out By Unit (CEID=323) (n-1)th glass
Acknowledge	S6F12 →		
		Whenever a glass processing is end, the equipment sends the glass data.	← S6F3 (n-1)th glass data(CEID 500)
Acknowledge	S6F4 →		
		← S6F11 Glass In By Indexer (CEID=322) (n-1)th glass	
Acknowledge	S6F12 →	Last(n th) Glass Flow	
		When the last glass processing is started, report the event	← S6F11 Last(nth) Glass Started
Acknowledge	S6F12 →		
		← S6F11 Glass Out By Indexer (CEID=321) Last(nth) glass	
Acknowledge	S6F12 →		
		Whenever a glass is moved into a unit from the previous	

Contents	Host	Equipment	Contents
			unit, the equipment sends the Component In Event
		← S6F11	Glass In By Unit (CEID=324) Last(n th) glass
Acknowledge	S6F12 →		
		← S6F11	Glass Process Start (CEID=335) Last(n th) glass
Acknowledge	S6F12 →		
			Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event
		← S6F11	Glass In By Sub-Unit (CEID=326) Last(n th) glass
Acknowledge	S6F12 →		
		In processing...	
			Whenever a glass is moved out to next unit, the equipment sends the Component Out Event
		← S6F11	Glass Out By Sub-Unit (CEID=325) Last(n th) glass
Acknowledge	S6F12 →		
		← S6F11	Glass Process End (CEID=337) Last(n th) glass
Acknowledge	S6F12 →		
			Whenever a glass is moved out to next unit, the equipment sends the Component Out Event
		← S6F11	Glass Out By Unit (CEID=323) Last(n th) glass
Acknowledge	S6F12 →		
			Whenever a glass processing is end, the equipment sends the glass data.
		← S6F3	Last(n th) glass data(CEID 500)
Acknowledge	S6F4 →		
		← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4 →		
		← S6F11	Glass In By Indexer (CEID=322) Last(n th) glass
Acknowledge	S6F12 →		
		← S6F103	Cassette Information Upload
Acknowledge	S6F104 →		
		CST is unloaded on the port by AGV, MGV or Crane.	

Contents	Host	Equipment	Contents
		← S6F11	CST Unload Request(CEID=203)
Acknowledge	S6F12 →		
			The port is empty
		← S6F11	CST Unload Complete(CEID=204)
Acknowledge	S6F12 →		

8.1.3 Un-packer Normal Scenario

Contents	Host	Equipment	Contents
Crate Port			
			The port is empty
		← S6F11	Crate Port Load Request(CEID=210)
Acknowledge	S6F12 →		
		← S6F11	Un-packer Bar Code Data Read (CEID=450)
Acknowledge	S6F12 →		
Remote Command (Bar Code Data (crate-id) result)	S2F41→		
		← S2F42	Acknowledge
		← S6F11	Crate Port Load Complete(CEID=212)
Acknowledge	S6F12 →		
		← S2F501	Work Order Request
Work Order Reply	S2F502 →		
		← S6F11	Remained glass count of Crate Report (CEID=211)
Acknowledge	S6F12 →		
Cassette Port			
		← S6F11	Load Request (CEID=200)
Acknowledge	S6F12 →		
		← S6F11	Load Complete (CEID=202)
Acknowledge	S6F12 →		
Empty CST Permission	S2F105 →		
		← S2F106	Acknowledge

		← S6F11	(N-1)th Glass Out By Indexer (CEID=321)
Acknowledge	S6F12 →		
		← S6F11	(N-1)th Glass In By Unit (CEID=324)
Acknowledge	S6F12 →		
Processing..			
		← S6F11	(N-1)th Glass Out By Unit(CEID=323)
Acknowledge	S6F12 →		
		← S6F3	(N-1)th data(CEID 500)
Acknowledge	S6F4 →		
		← S6F11	(N-1)th Glass In By Indexer(CEID=321)
Acknowledge	S6F12 →		
Last Glass Flow			
		← S6F3	Last glass data(CEID=500)
Acknowledge	S6F12 →		
		← S6F11	Last Glass Out By Indexer(CEID=321)
Acknowledge	S6F12 →		
		← S6F11	Last Glass In By Unit(CEID=324)
Acknowledge	S6F12 →		
Processing..			
		← S6F11	Last Glass Out By Unit(CEID=323)
Acknowledge	S6F12 →		
		← S6F3	Last data(CEID=500)
Acknowledge	S6F4 →		
		← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4→		
		← S6F11	Last Glass In By Indexer(CEID=322)
Acknowledge	S6F12 →		
Crate Port - Unloading			
		← S6F11	Crate CST Unload Request(CEID=213)
Acknowledge	S6F12 →		
		CST is unloaded on the port by AGV, MGV or Crane.	
		← S6F11	Crate CST Unload Complete (CEID=214)
Acknowledge	S6F12 →		
Cassette Port - Unloading			
		← S6F103	Cassette Information Upload

Acknowledge	S6F104 →		
		← S6F11	CST Unload Request(CEID=203)
Acknowledge	S6F12 →		
		← S6F11	ST Unload Complete(CEID=204)

8.1.4 Mask Cleaner Scenario

8.1.4.1 Port Type : PL

Contents	Host	Equipment	Contents
		The port is empty	
Acknowledge	S6F12 →	← S6F11 Mask Load Request (CEID=220)	
		← S6F11	Mask Load Complete (CEID=222)
Acknowledge	S6F12 →		
Mask cassette information Download	S2F109 →	If the verification result of cassette info is valid,	
		← S2F110	Acknowledge
		If the cassette information is valid, the equipment must report the 'Ready to Start' event to host regardless of transfer possible status.	
		← S6F11	Ready To Start (CEID=110)
Acknowledge	S6F12 →		
Remote Command(Process Start)	S2F41 →	← S2F42 Acknowledge	
		When the equipment starts the process of the cassette.	
		← S6F11	Process Start(CEID=301)
Acknowledge	S6F12 →		
		Processing...	
		When all processing mask input to machine .	
		← S6F109	Mask cassette information Upload
Acknowledge	S6F104→		
		← S6F11	Mask Unload Request(CEID=223)
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Mask Unload Complete(CEID=224)
Acknowledge	S6F12 →		

8.1.4.2 Port Type : PU

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Mask Load Request (CEID=220)
Acknowledge	S6F12 →		
		← S6F11	Mask Load Complete (CEID=222)
Acknowledge	S6F12 →		
Empty CST Permission	S2F105 →		
		← S2F106	Acknowledge
Processing...			
		When all work completed Mask input to Empty Mask CST .	
		← S6F109	Mask cassette information Upload
Acknowledge	S6F104→		
		← S6F11	Mask Unload Request(CEID=223)
Acknowledge	S6F12 →		
		The port is empty	
		← S6F11	Mask Unload Complete(CEID=224)
Acknowledge	S6F12 →		

8.1.4.3 Processing(Mask Flow)

Contents	Host	Equipment	Contents
		← S6F11	Mask Out By Indexer (CEID=341) (n-1) th Mask
Acknowledge	S6F12 →		
		Whenever a glass is moved into a unit from the previous	

Contents	Host	Equipment	Contents
			unit, the equipment sends the Component In Event
		← S6F11	Mask In By Unit (CEID=344) (n-1)th Mask
Acknowledge	S6F12 →		
		← S6F11	Glass Process Start (CEID=335) (n-1)th Mask
Acknowledge	S6F12 →		
			Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event
		← S6F11	Mask In By Sub-Unit (CEID=346) (n-1)th Mask
Acknowledge	S6F12 →		
	In processing...		
			Whenever a glass is moved out to next unit, the equipment sends the Component Out Event
		← S6F11	Mask Out By Sub-Unit (CEID=345) (n-1)th Mask
Acknowledge	S6F12 →		
		← S6F11	Glass Process End (CEID=337) (n-1)th Mask
Acknowledge	S6F12 →		
			Whenever a glass is moved out to next unit, the equipment sends the Component Out Event
		← S6F11	Mask Out By Unit (CEID=323) (n-1)th Mask
Acknowledge	S6F12 →		
			Whenever a glass processing is end, the equipment sends the glass data.
		← S6F3	(n-1)th Mask data(CEID=502)
Acknowledge	S6F4 →		
		← S6F11	Mask In By Indexer (CEID=342) (n-1)th Mask
Acknowledge	S6F12 →		
	Last(nth) Glass Flow		
			When the last glass processing is started, report the event
		← S6F11	Last(nth) Mask Started(CEID=312)

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		
		← S6F11	Mask Out By Indexer (CEID=341) Last(n th) Mask
Acknowledge	S6F12 →		
		← S6F11	Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event Mask In By Unit (CEID=344) Last(n th) Mask
Acknowledge	S6F12 →		
		← S6F11	Glass Process Start (CEID=335) Last(n th) Mask
Acknowledge	S6F12 →		
		← S6F11	Whenever a glass is moved into a Sub-unit from the unit, the equipment sends the Component In Event Mask In By Sub-Unit (CEID=346) Last(n th) Mask
Acknowledge	S6F12 →		
	In processing...		
		← S6F11	Whenever a glass is moved out to next unit, the equipment sends the Component Out Event Mask Out By Sub-Unit (CEID=345) Last(n th) Mask
Acknowledge	S6F12 →		
		← S6F11	Glass Process End (CEID=337) Last(n th) Mask
Acknowledge	S6F12 →		
		← S6F11	Whenever a glass is moved out to next unit, the equipment sends the Component Out Event Mask Out By Unit (CEID=343) Last(n th) Mask
Acknowledge	S6F12 →		
		← S6F3	Whenever a glass processing is end, the equipment sends the glass data. Last(n th) Mask data(CEID=502)
Acknowledge	S6F4→		
		← S6F11	Mask In By Indexer (CEID=342) Last(n th) Mask

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		

8.1.5 Sort Scenario

Contents	Host	Equipment	Contents
Sorter Job Command	S2F107 →		
	← S2F108	SCACK	
Source Port , Cassette Loading			
	← S6F11	Load Request	
Acknowledge	S6F12 →		
	← S6F11	Load Complete	
Cassette Information Download	S2F103 →		
	← S2F104	Acknowledge	
Target Port, Cassette Loading			
	← S6F11	Load Request	
Acknowledge	S6F12 →		
	← S6F11	Load Complete	
Cassette Information Download	S2F103 →		
	← S2F104	Acknowledge	
	← S6F11	Sorting Job Process Start(CEID=431)	
Acknowledge	S6F12 →		
	← S6F11	Out By Indexer	
Acknowledge	S6F12 →		
	← S6F11	In By Unit	
Acknowledge	S6F12 →		
	← S6F11	Out By Unit	
Acknowledge	S6F12 →		
	← S6F11	In By Indexer	
Acknowledge	S6F12 →		
Source Port Empty, Source Port Report S6F103.			
	← S6F3	Lot data Summary(CEID=501)	
Acknowledge	S6F4 →		
	← S6F103	Cassette Information Upload	
Acknowledge	S6F104 →		
Target Port Full, Target Port Report S6F103.			

Contents	Host	Equipment	Contents
		← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4→		
		← S6F103	Cassette Information Upload
Acknowledge	S6F104→		
			After Source port and Target Port reported Cassette Information Upload(S6F103)
Source Port			
		← S6F11	Unload Request
Acknowledge	S6F12→		
		← S6F11	Unload Complete
Acknowledge	S6F12→		
Target Port			
		← S6F11	Unload Request
Acknowledge	S6F12→		
		← S6F11	Unload Complete
Acknowledge	S6F12→		
			After Source port and Target Port reported Unload Complete.
		← S6F11	Sorting Job Process End(CEID=436)
Acknowledge	S6F12→		

8.1.6 Mask Management Scenario

Contents	Host	Equipment	Contents
			A mask is loaded in Stocker. Mask Load
		← S6F11	Mask Status Change
Acknowledge	S6F12→		
			A mask is moved to Buffer in Stocker. Mask Buffer In
		← S6F11	Mask Status Change
Acknowledge	S6F12→		
			A mask is moved from buffer in Stocker Mask Buffer Out
		← S6F11	Mask Status Change
Acknowledge	S6F12→		
			A mask is unloaded on Stage. Mask Stage In

Contents	Host	Equipment	Contents
		← S6F11	Mask Status Change
Acknowledge	S6F12→		
			A mask is unloaded from Stage. Mask Stage Out
		← S6F11	Mask Status Change
Acknowledge	S6F12→		
			A mask is unloaded from exposure. Mask Unload
		← S6F11	Mask Status Change
Acknowledge	S6F12→		

8.1.7 Material Management Scenario

Contents	Host	Equipment	Contents
			A Material is loaded in Stocker. EQP report Material ID Material Mount
		← S6F11	Material status Change
Acknowledge	S6F12→		
			The Material is in-use. Material In Use
		← S6F11	Material status Change
Acknowledge	S6F12→		
			The Material is dismounted Material dismount
		← S6F11	Material status Change
Acknowledge	S6F12→		

8.1.8 Packing Scenario

Contents	Host	Equipment	Contents
			Load port is empty
		← S6F11	CST Load Request
Acknowledge	S6F12 →		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
		← S6F11	CST Load Complete
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
Cassette Information Download	S2F103 →		
		If the verification result of cassette info is valid, ← S2F104 Acknowledge	
		If the cassette information is valid, the equipment must report the ‘Ready to Start’ event to host regardless of transfer possible status. ← S6F11 Ready To Start	
Acknowledge	S6F12 →		
Remote Command(Process Start)	S2F41 →		
		← S2F42 Acknowledge	
		When the equipment starts the process of the cassette. ← S6F11 Process Start	
Acknowledge	S6F12 →		
		← S6F11 Glass Out By Indexer	
Acknowledge	S6F12 →	In processing...	
		Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event ← S6F11 Glass In By Unit	
Acknowledge	S6F12 →		
		Whenever a glass processing is end, the equipment sends the glass data. ← S6F3 First(1 st) glass data(CEID 500)	
Acknowledge	S6F4 →		
		When the last glass processing is started, report the event ← S6F11 Last(n th) Glass Started	
Acknowledge	S6F12 →		
		← S6F103 Source Port Empty, Unloading	
Acknowledge	S6F104 →		
		← S6F11 Unload Request	
Acknowledge	S6F12 →		
		← S6F11 Unload Complete	
Acknowledge	S6F12 →		
		← S6F11 Load Request	
Acknowledge	S6F12 →	When the last glass processing is ended	

Contents	Host	Equipment	Contents
		← S6F3	Last(n th) glass data(CEID=500)
Acknowledge	S6F4 →		
			When the last glass processing is end, send the lot data
Acknowledge	S6F12 →		
		← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4 →		
		← S6F203	Packing box information upload
Acknowledge	S6F104 →		
Packing box ID send	S2F203 →		
		← S2F204	Acknowledge
After receive Box ID, EQP should print Box ID label. And then The Operator attach that Box ID label.			

8.1.9 Mask Offset Information Upload Scenario

Contents	Host	Equipment	Contents
			Report after inspection in PPA, Light On
		← S6F119	Mask Offset Information Upload
Acknowledge	S6F120 →		

8.1.10 Mask Offset Information Download Scenario

Contents	Host	Equipment	Contents
When reporting a mask use report from EVA, it downloads the information.			
Mask Offset Information Upload	S2F119 →		
		← S2F120	Acknowledg

8.1.11 Job Reservation Command Scenario

Contents	Host	Equipment	Contents
Passes the information to the equipment when the CST arrives at the port.			
Job Reservation Command	S2F121 →		
		← S2F122	Acknowledg

8.1.12 Job Reservation Reset Request Scenario

Contents	Host	Equipment	Contents
		Operator can request Reservation Reset from the unit using button in case of Reservation info lost or Chamber down etc. Please refer to the Unit Operation Scenario for detail information.	
		← S6F121	Job Reservation Reset Request
Acknowledge	S6F122→		

8.1.13 Remind Job Start Scenario

Contents	Host	Equipment	Contents
If all of the glass entering the equipment, it will be delivered.			
Remind Job Start		S2F123→	
		← S2F124	Acknowledg

8.1.14 Port PPID Send Scenario

Contents	Host	Equipment	Contents
Passes the information to the equipment when the CST arrives at the port.			
Port PPID Send		S2F131→	
		← S2F132	Acknowledg

8.1.15 Glass Call Data Request Scenario

Contents	Host	Equipment	Contents
		If the equipment requires a glass, request that information.	
		← S6F131	Glass Call Data Request
Acknowledge	S6F132→		

8.1.16 TrayPort Normal Scenario

8.1.16.1 Tray Normal Scenario – LoadPort

Contents	Host	Equipment	Contents

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →			
		← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →			
		← S6F11	Tray Information Request (CEID: 369)	
Acknowledge	S6F12 →	MVG		
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,		
		← S2F104	Acknowledge	
Remote Command(Process Start)	S2F41 →			
		← S2F42	Acknowledge	
		← S6F11	Tray Move Out (CEID:360)	
Acknowledge	S6F12 →			
		← S6F11	Tray Move In (CEID:361)	
Acknowledge	S6F12 →			
		← S6F11	Tray Process Start (CEID:365)	
Acknowledge	S6F12 →			
Cell Information Download	S2F103 →			
		← S2F104	Acknowledge	
		← S6F11	Cell Out Port (CEID:368)	
Acknowledge	S6F12 →			
	 If Last Cell Out Port		
		← S6F11	Tray Move Out (CEID:360)	
Acknowledge	S6F12 →			

8.1.16.2 Tray Normal Scenario – UnloadPort

Contents	Host	Equipment	Contents	
		← S6F11	Tray Move In (CEID: 361)	
Acknowledge	S6F12 →			
		← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →			
Empty CST Permission EMPTYCSTPMS = G	S2F105→			
		← S2F106	Acknowledge	

Contents	Host	Equipment	Contents
		← S6F11	Cell In Port (CEID:367)
Acknowledge	S6F12 →		Cell In Repetition...
		← S6F11	Tray Process End (CEID:362)
Acknowledge	S6F12 →		← S6F11 Tray Move Out (CEID:360)
Acknowledge	S6F12 →		← S6F11 Tray Move In (CEID: 361)
Acknowledge	S6F12 →	 If Last Tray & Last Cell
		← S6F11	Cell In Port (CEID:367)
Acknowledge	S6F12 →		← S6F11 Tray Process End (CEID:362)
Acknowledge	S6F12 →		← S6F11 Tray Move In (CEID: 361)
Acknowledge	S6F12 →		← S6F11 Batch Tray Process End (CEID: 366)
Acknowledge	S6F12 →		← S6F11 Tray Port Unload Complete (CEID: 233)
Acknowledge	S6F12 →		

8.1.17 CST Cleaner Normal Scenario

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	CST Load Request (CEID=200)
Acknowledge	S6F12 →		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
		← S6F11	CST Load Complete (CEID=202)
Acknowledge	S6F12 →		
Cassette Information Download	S2F103 →	If the verification result of cassette info is valid,	
			← S2F104 Acknowledge
			If the cassette information is valid, the equipment must report the 'Ready to Start' event to host regardless of transfer possible status.
		← S6F11	Ready To Start (CEID=110)
Acknowledge	S6F12 →		
Remote Command(Process Start)	S2F41 →		
			← S2F42 Acknowledge
			When the equipment starts the process of the cassette.
		← S6F11	Process Start(CEID=301)
Acknowledge	S6F12 →		
		← S6F11	CST Out by Unit (CEID=330)
Acknowledge	S6F12 →		
			The port is empty
		← S6F11	CST Load Request (CEID=200)
Acknowledge	S6F12 →		
			Whenever a CST is moved into a unit from the previous unit, the equipment sends the Cst In Event
		← S6F11	CST In by Unit (CEID=329)
Acknowledge	S6F12 →		
In processing...			
		← S6F11	CST Out by Unit (CEID=330)
Acknowledge	S6F12 →		
		← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4→		
		← S6F11	CST In by Unit (CEID=329)
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
		← S6F103	Cassette Information Upload
Acknowledge	S6F104→		
			CST is unloaded on the port by AGV, MGV or Crane.
		← S6F11	CST Unload Request(CEID=203)
Acknowledge	S6F12 →		
			The port is empty
		← S6F11	CST Unload Complete(CEID=204)
Acknowledge	S6F12 →		

8.1.18 Mask CST Cleaner Normal Scenario

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request (CEID=200)
Acknowledge	S6F12 →		
		A Mask CST is loaded on the port by AGV, OHT or Crane. And Mask CST Sensor on	
		← S6F11	CST Load Complete (CEID=202)
Acknowledge	S6F12 →		
Cassette Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		If the Mask cassette information is valid, the equipment must report the ‘Ready to Start’ event to host regardless of transfer possible status.	
		← S6F11	Ready To Start (CEID=110)
Acknowledge	S6F12 →		
Remote Command(Process Start)	S2F41 →	← S2F42	Acknowledge
		When the equipment starts the process of the Mask cassette.	
		← S6F11	Process Start(CEID=301)
Acknowledge	S6F12 →		
		← S6F11	CST Out by Unit (CEID=330)
Acknowledge	S6F12 →		
		The port is empty	
		← S6F11	CST Load Request (CEID=200)
Acknowledge	S6F12 →		
		Whenever a Mask CST is moved into a unit from the previous unit, the equipment sends the Mask Cst In Event	
		← S6F11	CST In by Unit (CEID=329)
Acknowledge	S6F12 →		
		Whenever a Mask Sub-unit is moved into a Sub-unit from the unit, the equipment sends the Mask CST In Event	
		← S6F11	CST In by Sub-Unit (CEID=338)
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
In processing...			
		← S6F11	CST Out by Sub-Unit (CEID=339)
Acknowledge	S6F12 →		
		← S6F11	CST Out by Unit (CEID=330)
Acknowledge	S6F12 →		
		← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4→		
		← S6F11	CST In by Unit (CEID=329)
Acknowledge	S6F12 →		
		← S6F103	Cassette Information Upload
Acknowledge	S6F104→		
		CST is unloaded on the port by AGV, MGV or Crane.	
		← S6F11	CST Unload Request(CEID=203)
Acknowledge	S6F12 →		
		The port is empty	
		← S6F11	CST Unload Complete(CEID=204)
Acknowledge	S6F12 →		

8.2 Abnormal Sequence

8.2.1 Lot Cancel by Host(ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
			A CST is loaded on the port by AGV, OHT or Crane. And then read the CSTID.
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
A wrong cassette is loaded on the port			
Remote Command. (Lot Cancel)	S2F41 →		Turn on the buzzer and signal tower.
			← S2F42 Acknowledge
			← S6F11 Lot Cancel
Acknowledge	S6F12→		
			← S6F11 CST Unload Request
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV or Crane.
			← S6F11 CST Unload Complete
Acknowledge	S6F12→		
:			

Remark:

If a wrong cassette is loaded on any port, host would send a command of
Lot cancellation to the equipment unconditionally.

8.2.2 Conversation Timeout (Cassette Information Download) :

8.2.2.1 Operator edits Cassette Information Data (ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
			← S9F13 Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.

Contents	Host	Equipment	Contents	
		The operator Inputs the Cassette Information Data.		
		After the operator confirmed the cassette information, the equipment should check the data.		
		The operator pushes the Start Button for processing the cassette.		
		When the equipment starts the process of the cassette.		
		← S6F11	Process Start	
Acknowledge	S6F12→			
		← S6F11	Glass Out By Indexer	
Acknowledge	S6F12→			

8.2.2.2 *Operator changes ON-LINE MODE to OFF-LINE*

Contents	Host	Equipment	Contents	
		← S6F11	CST Load Complete	
Acknowledge	S6F12→			
		← S9F13	Conversation Timeout	
		The equipment calls an operator with buzzer and signal tower		
		The operator changes to OFF-LINE		
		← S6F11	OFF-LINE	
Acknowledge	S6F12→			

8.2.2.3 *Operator selects Lot Cancel*

Contents	Host	Equipment	Contents	
		← S6F11	CST Load Complete	
Acknowledge	S6F12→			
		← S9F13	Conversation Timeout	
		The equipment calls an operator with buzzer and signal tower		
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.		
		If an operator changes to ON-LINE LOCAL.		
		← S6F11	“Equipment ON-LINE LOCAL” Event.	
Acknowledge	S6F12→			

Contents	Host	Equipment	Contents	
		The operator pushes the Lot Cancel button.		
		← S6F11	Lot Cancel	
Acknowledge	S6F12→			
		← S6F11	CST Unload Request	
Acknowledge	S6F12→			
		CST is unloaded on the port by AGV, Crane.		
		← S6F11	CST Unload Complete	
Acknowledge	S6F12→			

8.2.3 Validation NG (S2F103)

8.2.3.1 Operator edits the Cassette Information Data.

Contents	Host	Equipment	Contents	
		← S6F11	CST Load Complete	
Acknowledge	S6F12→			
Cassette Information Download	S2F103 →			
		← S2F104	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.	
		The equipment calls an operator with buzzer and signal tower		
		If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.		
		The operator changes the wrong data in the cassette information. After modification(or not) for the cassette information, the operator should confirm it.		
		The operator pushes the Start Button for processing the cassette.		
		When the equipment starts the process of the cassette.		
		← S6F11	Process Start	
Acknowledge	S6F12→			

8.2.3.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete

Contents	Host	Equipment	Contents
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
		← S2F104	CIACK (= 1, 2, 3, 4, 5, 7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
		← S6F11	The operator changes to OFF-LINE
Acknowledge	S6F12→		OFF-LINE

8.2.3.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
		← S2F104	CIACK (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.
			If an operator changes to ON-LINE LOCAL.
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			The operator pushes the Lot Cancel button.
		← S6F11	Lot Cancel
Acknowledge	S6F12→		
		← S6F11	CST Unload Request
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
		← S6F11	CST Unload Complete
Acknowledge	S6F12→		

8.2.4 Lot Cancel by Operator

8.2.4.1 Lot Cancel by Operator at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
			The port is empty
			← S6F11 CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
			If the verification result of cassette info is valid,
			← S2F104 Acknowledge
			If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.
			← S6F11 Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
			← S2F42 Acknowledge (HCACK) error
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.
			If an operator changes to ON-LINE LOCAL.
			← S6F11 “Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			An operator activates Lot Cancel before Process Start.
			← S6F11 Lot Cancel
Acknowledge	S6F12→		
			← S6F11 CST Unload Request
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
			← S6F11 CST Unload Complete

Contents	Host	Equipment	Contents
Acknowledge	S6F12→		

8.2.4.2 *Lot Cancel by Operator at ON-LINE LOCAL Mode*

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
		← S2F104	Acknowledge
Remote Command (Operator Call)	S2F41 →		
		← S2F42	Acknowledge
		<i>After modifying(or not) for the cassette information, the operator should confirm it.</i>	
		<i>The operator pushes the Start Button for processing the cassette.</i>	
		An operator activates Lot Cancel in place of Lot Start.	
		← S6F11	Lot Cancel
Acknowledge	S6F12→		
		← S6F11	CST Unload Request
Acknowledge	S6F12→		
		CST is unloaded on the port by AGV, Crane.	
		← S6F11	CST Unload Complete
Acknowledge	S6F12→		

8.2.5 Process Abort

8.2.5.1 *Process Abort by Operator at Online Mode:*

Contents	Host	Equipment	Contents
		← S6F11	Process Start
Acknowledge	S6F12→		

In processing...before Lot End			
			An operator activates Process Abort in processing
	← S6F11	Process Abort	
Acknowledge	S6F12→		
	← S6F3	Lot data Summary(CEID 501) for only processed	
Acknowledge	S6F12→	← S6F103	Cassette Information Upload
Acknowledge	S6F104 →	← S6F11	CST Unload Request
Acknowledge	S6F12→	CST is unloaded on the port by AGV, MGV or Crane.	
	← S6F11	CST Unload Complete	
Acknowledge	S6F12→		

8.2.6 Empty Cassette

8.2.6.1 Loading Empty Cassette at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete(PTTYPE=PU)
Acknowledge	S6F12→		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge
		The EQP start to insert glasses to empty CST.	

8.2.6.2 Loading Empty Cassette at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete(PTTYPE=PU)
Acknowledge	S6F12→		

	The EQP start to insert glasses to empty CST.
--	---

8.2.6.3 Cancel Empty Cassette

Contents	Host	Equipment	Contents	
		PTTYPE :PU		
		← S6F11	CST Load Request	
Acknowledge	S6F12→			
		Then read the CSTID.		
		← S6F11	CST Load Complete	
Acknowledge	S6F12→			
Empty CST Permission EMPTYCSTPMS = C	S2F105→			
		← S2F106	Acknowledge	
		← S6F11	Lot Cancel	
Acknowledge	S6F12→			
		← S6F11	CST Unload Request	
Acknowledge	S6F12→			
		← S6F11	CST Unload Complete	
Acknowledge	S6F12→			

8.2.7 Conversation Timeout (Start Command: ON-LINE REMOTE Mode Only)

8.2.7.1 Operator activates Lot Start (ON-LINE REMOTE)

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	CST Load Request	
Acknowledge	S6F12→			
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on		
		Then read the CSTID.		
		← S6F11	CST Load Complete	
Acknowledge	S6F12→			
Cassette Information Download	S2F103 →			
		If the verification result of cassette info is valid,		
		← S2F104	Acknowledge	

Contents	Host	Equipment	Contents
			If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.
			← S6F11 Ready To Start
Acknowledge	S6F12→		
			There is no the Process Start command from the host within Conversation timeout.
			← S9F13 Conversation Timeout
			Call Operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for starting of processing.
			If an operator changes to ON-LINE LOCAL.
			← S6F11 “Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			The operator pushes the Start Button for processing the cassette.
			When the equipment starts the process of the cassette.
			← S6F11 Process Start
Acknowledge	S6F12→		

8.2.7.2 *Operator Changes ON-LINE MODE to OFF-LINE*

Contents	Host	Equipment	Contents
			The port is empty
			← S6F11 CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
			If the verification result of cassette info is valid,
			← S2F104 Acknowledge
			If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of

Contents	Host	Equipment	Contents
		transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
		There is no the Process Start command from the host within Conversation timeout.	
		← S9F13	Conversation Timeout
		Call Operator with buzzer and signal tower	
		The operator changes to OFF-LINE	
		← S6F11	OFF-LINE
Acknowledge	S6F12→		

8.2.7.3 *Operator Select Lot Cancel*

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
		If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		If the cassette information is valid, the equipment must report the 'Ready To Start' event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
		There is no the Process Start command from the host within Conversation timeout.	
		← S9F13	Conversation Timeout
		Call Operator with buzzer and signal tower	
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE	

Contents	Host	Equipment	Contents
		LOCAL for cancellation of processing.	
		If an operator changes to ON-LINE LOCAL.	
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
		An operator activates Lot Cancel before Process Start.	
		← S6F11	Lot Cancel
Acknowledge	S6F12→		
		← S6F11	CST Unload Request
Acknowledge	S6F12→		
		CST is unloaded on the port by AGV, Crane.	
		← S6F11	CST Unload Complete
Acknowledge	S6F12→		
		:	

8.2.8 Validation NG (S2F41: ON-LINE REMOTE Mode Only)

8.2.8.1 Operator activates Lot Start (ON-LINE REMOTE)

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
		If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
		← S2F42	Acknowledge(HCACK != 0)

Contents	Host	Equipment	Contents
		Call Operator with buzzer and signal tower	
		The operator modifies the wrong item in the Start Command from the host.	
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
		← S6F11	Process Start
Acknowledge	S6F12→		

8.2.8.2 *Operator Changes ON-LINE MODE to OFF-LINE*

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
		If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		If the cassette information is valid, the equipment must report the 'Ready To Start' event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
		← S2F42	Acknowledge(HCACK != 0)
		Call Operator with buzzer and signal tower	
		The operator changes to OFF-LINE	
		← S6F11	OFF-LINE
Acknowledge	S6F12→		

8.2.8.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
			The port is empty
			← S6F11 CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
Cassette Information Download	S2F103 →		
			If the verification result of cassette info is valid,
			← S2F104 Acknowledge
			If the cassette information is valid, the equipment must report the 'Ready To Start' event to host regardless of transfer possible status.
			← S6F11 Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
			← S2F42 Acknowledge(HCACK != 0)
			Call Operator with buzzer and signal tower
			The operator pushes the Lot Cancel button.
			← S6F11 Lot Cancel
Acknowledge	S6F12→		
			← S6F11 CST Unload Request
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
			← S6F11 CST Unload Complete
Acknowledge	S6F12→		

8.3 Abnormal Sequence Mask Cleaner

8.3.1 Lot Cancel by Host(ON-LINE REMOTE&ON-LINE LOCAL) - LoadPort

Contents	Host	Equipment	Contents
			← S6F11 CST Load Complete (CEID: 222)
Acknowledge	S6F12→		

Mask CST Info Download	S2F109 →		
		← S2F110	Acknowledge
		← S6F11	Ready To Start (CEID: 110)
Acknowledge	S6F12→		
A wrong cassette is loaded on the port			
Remote Command.: 2 (Lot Cancel)	S2F41 →	Turn on the buzzer and signal tower.	
		← S2F42	Acknowledge
		← S6F11	Lot Cancel (CEID: 304)
Acknowledge	S6F12→		
		← S6F11	CST Unload Request (CEID: 223)
Acknowledge	S6F12→		
		← S6F11	CST is unloaded on the port by AGV or Crane.
		← S6F11	CST Unload Complete (CEID: 224)
Acknowledge	S6F12→		

Remark: If a wrong cassette is loaded on any port, host would send a command of Lot cancellation to the equipment unconditionally.

8.3.2 Conversation Timeout (Mask Cassette Information Download) - LoadPort

8.3.2.1 *Operator edits Cassette Information Data (ON-LINE REMOTE&ON-LINE LOCAL)*

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.
			The operator Inputs the Cassette Information Data.
			After the operator confirmed the cassette information, the equipment should check the data.
			The operator pushes the Start Button for processing the cassette.
			When the equipment starts the process of the cassette.
			/ Local Change /
		← S6F11	Report Control State Mode (CEID: 112)

Contents	Host	Equipment	Contents
Acknowledge	S6F12→		
		← S6F11	Process Start (CEID: 301)
Acknowledge	S6F12→		
		← S6F11	Glass Out By Indexer
Acknowledge	S6F12→		

8.3.2.2 Operator changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			The operator changes to OFF-LINE
		← S6F11	Rport Control State Mode OFF-LINE (CEID: 111)
Acknowledge	S6F12→		

8.3.2.3 Operator selects Lot Cancel

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.
			If an operator changes to ON-LINE LOCAL.
		← S6F11	“Equipment ON-LINE LOCAL” Event (CEID: 112).
Acknowledge	S6F12→		
			The operator pushes the Lot Cancel button.
		← S6F11	Lot Cancel (CEID: 304)
Acknowledge	S6F12→		
		← S6F11	CST Unload Request (CEID: 223)

Contents	Host	Equipment	Contents
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
		← S6F11	CST Unload Complete (CEID: 224)
Acknowledge	S6F12→		

8.3.3 Validation NG (S2F109) - LoadPort

8.3.3.1 Operator edits the Cassette Information Data.

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
		← S2F110	CIACK (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator must change the control state to Local.
		← S6F11	Report Control State Mode (CEID: 112)
Acknowledge	S6F12→		
			operator should edit cassette information. The operator changes the wrong data in the cassette information. After modification(or not) for the cassette information, the operator should confirm it.
			The operator pushes the Start Button for processing the cassette.
			When the equipment starts the process of the cassette.
		← S6F11	Process Start (CEID: 301)
Acknowledge	S6F12→		

8.3.3.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		

Contents	Host	Equipment	Contents
Mask Cassette Information Download	S2F109 →		
		← S2F110	CIACK (= 1, 2, 3, 4, 5, 7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
		← S6F11	The operator changes to OFF-LINE OFF-LINE (CEID: 111)
Acknowledge	S6F12→		

8.3.3.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
		← S2F110	CIACK (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.
		← S6F11	If an operator changes to ON-LINE LOCAL. “Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			The operator pushes the Lot Cancel button.
		← S6F11	Lot Cancel (CEID: 304)
Acknowledge	S6F12→		
		← S6F11	CST Unload Request (CEID: 223)
Acknowledge	S6F12→		
		← S6F11	CST is unloaded on the port by AGV, Crane.
		← S6F11	CST Unload Complete (CEID: 224)
Acknowledge	S6F12→		

8.3.4 Lot Cancel by Operator - LoadPort

8.3.4.1 Lot Cancel by Operator at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
			The port is empty
			← S6F11 CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
			If the verification result of cassette info is valid,
			← S2F110 Acknowledge
			If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.
			← S6F11 Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
			← S2F42 Acknowledge (HCACK) error
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.
			If an operator changes to ON-LINE LOCAL.
			← S6F11 “Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			An operator activates Lot Cancel before Process Start.
			← S6F11 Lot Cancel (CEID: 304)
Acknowledge	S6F12→		
			← S6F11 CST Unload Request (CEID: 223)
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
			← S6F11 CST Unload Complete (CEID: 224)

Contents	Host	Equipment	Contents
Acknowledge	S6F12→		

8.3.4.2 Lot Cancel by Operator at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request (CEID: 220)
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
		← S2F110	Acknowledge
Remote Command 6 (Operator Call)	S2F41 →		
		← S2F42	Acknowledge
		<i>After modifying(or not) for the cassette information, the operator should confirm it.</i>	
		<i>The operator pushes the Start Button for processing the cassette.</i>	
		An operator activates Lot Cancel in place of Lot Start.	
		← S6F11	Lot Cancel (CEID: 304)
Acknowledge	S6F12→		
		← S6F11	CST Unload Request (CEID: 223)
Acknowledge	S6F12→		
		CST is unloaded on the port by AGV, Crane.	
		← S6F11	CST Unload Complete (CEID: 224)
Acknowledge	S6F12→		

8.3.5 Process Abort

8.3.5.1 Process Abort by Operator at Online Mode:

Contents	Host	Equipment	Contents
		← S6F11	Process Start (CEID: 301)

Acknowledge	S6F12→		
In processing...before Lot End			
		An operator activates Process Abort in processing	
		← S6F11	Process Abort (CEID: 305)
Acknowledge	S6F12→		
		← S6F3	Lot data Summary(CEID 501) for only processed
Acknowledge	S6F12→		
		← S6F109	Mask Cassette Information Upload
Acknowledge	S6F110 →		
		← S6F11	Mask CST Unload Request (CEID: 223)
Acknowledge	S6F12→		
		CST is unloaded on the port by AGV, MGV or Crane.	
		← S6F11	CST Unload Complete (CEID: 224)
Acknowledge	S6F12→		

8.3.6 Empty Cassette - UnloadPort

8.3.6.1 Loading Empty Cassette at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
			← S6F11 CST Load Complete(PTTYPE=PU)
Acknowledge	S6F12→		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge
		The EQP start to insert glasses to empty CST.	

8.3.6.2 Loading Empty Cassette at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.

		← S6F11	CST Load Complete(PTTYPE=PU)
Acknowledge	S6F12→		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge
			The EQP start to insert glasses to empty CST.

8.3.6.3 Cancel Empty Cassette

Contents	Host	Equipment	Contents	
		PTTYPE :PU		
		← S6F11	CST Load Request	
Acknowledge	S6F12→			
			Then read the CSTID.	
		← S6F11	CST Load Complete	
Acknowledge	S6F12→			
Empty CST Permission EMPTYCSTPMS = C	S2F105→			
		← S2F106	Acknowledge	
		← S6F11	Lot Cancel	
Acknowledge	S6F12→			
		← S6F11	CST Unload Request	
Acknowledge	S6F12→			
		← S6F11	CST Unload Complete	
Acknowledge	S6F12→			

8.3.7 Conversation Timeout (Start Command: ON-LINE REMOTE Mode Only) - LoadPort

8.3.7.1 Operator activates Lot Start (ON-LINE REMOTE)

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane.
			And CST Sensor on
			Then read the CSTID.

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
		If the verification result of cassette info is valid,	
		← S2F110	Acknowledge
		If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
		There is no the Process Start command from the host within Conversation timeout.	
		← S9F13	Conversation Timeout
		Call Operator with buzzer and signal tower	
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for starting of processing.	
		If an operator changes to ON-LINE LOCAL.	
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
		← S6F11	Process Start
Acknowledge	S6F12→		

8.3.7.2 *Operator Changes ON-LINE MODE to OFF-LINE*

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete
Acknowledge	S6F12→		

Contents	Host	Equipment	Contents
Mask Cassette Information Download	S2F109 →		
		If the verification result of cassette info is valid, ← S2F110 Acknowledge	
		If the cassette information is valid, the equipment must report the 'Ready To Start' event to host regardless of transfer possible status. ← S6F11 Ready To Start	
Acknowledge	S6F12→		
		There is no the Process Start command from the host within Conversation timeout. ← S9F13 Conversation Timeout	
		Call Operator with buzzer and signal tower	
		The operator changes to OFF-LINE ← S6F11 OFF-LINE	
Acknowledge	S6F12→		

8.3.7.3 *Operator Select Lot Cancel*

Contents	Host	Equipment	Contents
		The port is empty ← S6F11 CST Load Request	
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID. ← S6F11 CST Load Complete	
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
		If the verification result of cassette info is valid, ← S2F110 Acknowledge	
		If the cassette information is valid, the equipment must report the 'Ready To Start' event to host regardless of transfer possible status. ← S6F11 Ready To Start	
Acknowledge	S6F12→		

Contents	Host	Equipment	Contents
			There is no the Process Start command from the host within Conversation timeout.
			← S9F13 Conversation Timeout
			Call Operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.
			If an operator changes to ON-LINE LOCAL.
			← S6F11 “Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			An operator activates Lot Cancel before Process Start.
			← S6F11 Lot Cancel
Acknowledge	S6F12→		
			← S6F11 CST Unload Request
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
			← S6F11 CST Unload Complete
Acknowledge	S6F12→		
			:

8.3.8 Validation NG (S2F41: ON-LINE REMOTE Mode Only) - LoadPort

8.3.8.1 Operator activates Lot Start (ON-LINE REMOTE)

Contents	Host	Equipment	Contents
			The port is empty
			← S6F11 CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
			← S6F11 CST Load Complete
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
			If the verification result of cassette info is valid,
			← S2F110 Acknowledge
			If the cassette information is valid, the equipment must

Contents	Host	Equipment	Contents
		report the ‘Ready To Start’ event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
		← S2F42	Acknowledge(HCACK != 0)
		Call Operator with buzzer and signal tower	
		The operator modifies the wrong item in the Start Command from the host.	
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
		← S6F11	Process Start
Acknowledge	S6F12→		

8.3.8.2 *Operator Changes ON-LINE MODE to OFF-LINE*

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	CST Load Request
Acknowledge	S6F12→		
		A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
		If the verification result of cassette info is valid,	
		← S2F110	Acknowledge
		If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12→		
Remote Command	S2F41 →		

Contents	Host	Equipment	Contents
(Process Start)			
		← S2F42	Acknowledge(HCACK != 0)
			Call Operator with buzzer and signal tower
			The operator changes to OFF-LINE
		← S6F11	OFF-LINE
Acknowledge	S6F12→		

8.3.8.3 *Operator Selects Lot Cancel*

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	CST Load Request
Acknowledge	S6F12→		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Mask Cassette Information Download	S2F109 →		
			If the verification result of cassette info is valid, ← S2F110 Acknowledge
			If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.
		← S6F11	Ready To Start
Acknowledge	S6F12→		
Remote Command (Process Start)	S2F41 →		
		← S2F42	Acknowledge(HCACK != 0)
			Call Operator with buzzer and signal tower
			The operator pushes the Lot Cancel button.
		← S6F11	Lot Cancel
Acknowledge	S6F12→		
		← S6F11	CST Unload Request
Acknowledge	S6F12→		
			CST is unloaded on the port by AGV, Crane.
		← S6F11	CST Unload Complete

Contents	Host	Equipment	Contents
Acknowledge	S6F12→		

8.3.9 Conversation Timeout (S2F105) - UnloadPort

8.3.9.1 Operator activates Lot Start (ON-LINE REMOTE)

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.
			The operator Inputs the Cassette Information Data.
			After the operator confirmed the cassette information, the equipment should check the data.
			The operator pushes the Start Button for processing the cassette.
			When the equipment starts the process of the cassette.
			/ Local Change /
		← S6F11	Report Control State Mode (CEID: 112)
Acknowledge	S6F12→		
		← S6F11	Process Start (CEID: 301)
Acknowledge	S6F12→		
		← S6F11	Glass Out By Indexer
Acknowledge	S6F12→		

8.3.9.2 Operator Changes On-Line Mode to Off-Line

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal

Contents	Host	Equipment	Contents	
		tower		
		The operator changes to OFF-LINE		
Acknowledge	S6F12→	← S6F11	Rport Control State Mode OFF-LINE (CEID: 111)	

8.3.9.3 Operator Select Lot Cancel

Contents	Host	Equipment	Contents	
		← S6F11	CST Load Complete (CEID: 222)	
Acknowledge	S6F12→			
		← S9F13	Conversation Timeout	
		The equipment calls an operator with buzzer and signal tower		
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.		
		If an operator changes to ON-LINE LOCAL.		
		← S6F11	“Equipment ON-LINE LOCAL” Event (CEID: 112).	
Acknowledge	S6F12→			
		The operator pushes the Lot Cancel button.		
		← S6F11	Lot Cancel (CEID: 304)	
Acknowledge	S6F12→			
		← S6F11	CST Unload Request (CEID: 223)	
Acknowledge	S6F12→			
		← S6F11	CST is unloaded on the port by AGV, Crane.	
		← S6F11	CST Unload Complete (CEID: 224)	
Acknowledge	S6F12→			

8.3.10 Validation NG (S2F105) - UnloadPort

8.3.10.1 Operator edits the Cassette Information Data.

Contents	Host	Equipment	Contents	
		← S6F11	CST Load Complete (CEID: 222)	
Acknowledge	S6F12→			
Empty CST Permission	S2F105 →			

Contents	Host	Equipment	Contents
		← S2F106	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator must change the control state to Local.
		← S6F11	Report Control State Mode (CEID: 112)
Acknowledge	S6F12→		
			operator should edit cassette information. The operator changes the wrong data in the cassette information. After modification(or not) for the cassette information, the operator should confirm it.
			The operator pushes the Start Button for processing the cassette.
			When the equipment starts the process of the cassette.
		← S6F11	Process Start (CEID: 301)
Acknowledge	S6F12→		

8.3.10.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
Empty CST Permission	S2F105 →		
		← S2F106	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			The operator changes to OFF-LINE
		← S6F11	OFF-LINE (CEID: 111)
Acknowledge	S6F12→		

8.3.10.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		← S6F11	CST Load Complete (CEID: 222)
Acknowledge	S6F12→		
Empty CST Permission	S2F105 →		
		← S2F106	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.
			If an operator changes to ON-LINE LOCAL.
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
			The operator pushes the Lot Cancel button.
		← S6F11	Lot Cancel (CEID: 304)
Acknowledge	S6F12→		
		← S6F11	CST Unload Request (CEID: 223)
Acknowledge	S6F12→		
		← S6F11	CST is unloaded on the port by AGV, Crane.
		← S6F11	CST Unload Complete (CEID: 224)
Acknowledge	S6F12→		

8.4 Abnormal Sequence TrayPort

8.4.1 Lot Cancel by Host(ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →		MVG
Tray Information Download	S2F103 →		If the verification result of cassette info is valid,

Contents	Host	Equipment	Contents
		← S2F104	Acknowledge
Remote Command (Process Cancel)	S2F41 →		
		← S2F42	Acknowledge
		← S6F11	Tray Process Cancel
Acknowledge	S6F12 →		
		← S6F11	Tray Unload Request
Acknowledge	S6F12 →		
		← S6F11	Tray Unload Complete
Acknowledge	S6F12 →		

8.4.2 Conversation TimeOut (Tray Information Download)

8.4.2.1 Operator edits Tray Information Data (ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →		
		← S9F13	Conversation Timeout
		The equipment calls an operator with buzzer and signal tower	
		If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.	
		The operator Inputs the Cassette Information Data.	
		After the operator confirmed the cassette information, the equipment should check the data.	
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
		← S6F11	Tray Move Out (CEID:360)

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		
		← S6F11	Tray Move In (CEID:361)
Acknowledge	S6F12 →		
		← S6F11	Tray Process Start
Acknowledge	S6F12 →		

8.4.2.2 Operator changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →		
			Unresponsiveness....
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			The operator changes to OFF-LINE
		← S6F11	OFF-LINE
Acknowledge	S6F12 →		

8.4.2.3 Operator selects Lot Cancel

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
Unresponsiveness....			
		← S9F13	Conversation Timeout
The equipment calls an operator with buzzer and signal tower			
If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.			
If an operator changes to ON-LINE LOCAL.			
← S6F11 "Equipment ON-LINE LOCAL" Event.			
Acknowledge	S6F12 →		
		← S6F11	Tray Process Cancel
Acknowledge	S6F12 →		
		← S6F11	Tray Unload Request
Acknowledge	S6F12 →		
		← S6F11	Tray Unload Complete
Acknowledge	S6F12 →		

8.4.3 Validation NG (Tray Information Download)

8.4.3.1 Operator edits the Tray Information Data

Contents	Host	Equipment	Contents
The port is empty			
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
← S6F11 Tray Load Complete (CEID=231)			
Acknowledge	S6F12 →		
← S6F11 Tray Information Request (CEID: 369)			
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.
The equipment calls an operator with buzzer and signal tower			
If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.			

Contents	Host	Equipment	Contents
		The operator changes the wrong data in the cassette information.	After modification(or not) for the cassette information, the operator should confirm it.
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
Acknowledge	S6F12→	← S6F11	Tray Process Start

8.4.3.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.
		The equipment calls an operator with buzzer and signal tower	
		← S6F11	The operator changes to OFF-LINE
		← S6F11	OFF-LINE
Acknowledge	S6F12→		

8.4.3.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →		If the verification result of cassette info is valid,
		← S2F104	CIACK (= 1, 2, 3, 4, 5, 7, 8, 9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should edit Tray information.
			If an operator changes to ON-LINE LOCAL.
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12 →		
			The operator pushes the Lot Cancel button.
		← S6F11	Lot Cancel
Acknowledge	S6F12 →		
		← S6F11	Tray Unload Request
Acknowledge	S6F12 →		
		← S6F11	CST is unloaded on the port by AGV, Crane.
		← S6F11	Tray Unload Complete
Acknowledge	S6F12 →		

8.4.4 Lot Cancel by Operator

8.4.4.1 Lot Cancel by Operator at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
Remote Command(Process Start)	S2F41 →		
		← S2F42	Acknowledge (HCACK) error
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.	
		If an operator changes to ON-LINE LOCAL.	
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12 →		
		An operator activates Lot Cancel before Process Start.	
		← S6F11	Tray Lot Cancel
Acknowledge	S6F12 →		
		← S6F11	Tray Unload Request
Acknowledge	S6F12 →		
		CST is unloaded on the port by AGV, Crane.	
		← S6F11	Tray Unload Complete
Acknowledge	S6F12 →		

8.4.4.2 Lot Cancel by Operator at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
Remote Command (Operator Call)	S2F41 →		
		← S2F42	Acknowledge

Contents	Host	Equipment	Contents
		<i>After modifying(or not) for the cassette information, the operator should confirm it.</i>	
		<i>The operator pushes the Start Button for processing the cassette.</i>	
		An operator activates Lot Cancel in place of Lot Start.	
		← S6F11	Lot Cancel
Acknowledge	S6F12 →		
		← S6F11	CST Unload Request
Acknowledge	S6F12 →		
		<i>CST is unloaded on the port by AGV, Crane.</i>	
		← S6F11	CST Unload Complete
Acknowledge	S6F12 →		

8.4.5 Process Abort

8.4.5.1 Process Abort by Operator at Online Mode:

Contents	Host	Equipment	Contents
		← S6F11	Tray Process Start
Acknowledge	S6F12 →		
In processing...before Lot End			
		An operator activates Process Abort in processing	
		← S6F11	Tray Process Abort
Acknowledge	S6F12 →		
		← S6F3	Lot data Summary(CEID 501) for only processed
Acknowledge	S6F12 →		
		← S6F11	Batch Tray Process End
Acknowledge	S6F104 →		
		← S6F11	Tray Unload Request
Acknowledge	S6F12 →		
		<i>CST is unloaded on the port by AGV, MGV or Crane.</i>	
		← S6F11	Tray Unload Complete
Acknowledge	S6F12 →		

8.4.6 Empty Tray

8.4.6.1 Loading Empty Cassette at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
		← S6F11	Tray Move In (CEID: 361)
Acknowledge	S6F12 →		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
		← S6F11	Tray Load Complete. (PTTYPE: PU)
Acknowledge	S6F12 →		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge

8.4.6.2 Loading Empty Cassette at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
		← S6F11	Tray Move In (CEID: 361)
Acknowledge	S6F12 →		
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
		← S6F11	Tray Load Complete. (PTTYPE: PU)
Acknowledge	S6F12 →		

8.4.6.3 Cancel Empty Tray

Contents	Host	Equipment	Contents
		PTTYPE :PU	
		← S6F11	Tray Load Request
Acknowledge	S6F12 →		
			Then read the CSTID.
		← S6F11	Tray Load Complete
Acknowledge	S6F12 →		
Empty CST Permission EMPTYCSTPMS = C	S2F105→		

		← S2F106	Acknowledge
		← S6F11	Tray Lot Cancel
Acknowledge	S6F12→		
		← S6F11	Tray Unload Request
Acknowledge	S6F12→		
		← S6F11	Tray Unload Complete
Acknowledge	S6F12→		

8.4.7 Conversation Timeout (Start Command: ON-LINE REMOTE Mode Only)

8.4.7.1 Operator activates Lot Start (ON-LINE REMOTE)

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		There is no the Process Start command from the host within Conversation timeout.	
		← S9F13	Conversation Timeout
		Call Operator with buzzer and signal tower	
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for starting of processing.	
		If an operator changes to ON-LINE LOCAL.	
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12→		
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
		← S6F11	Tray Move Out (CEID:360)
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
		← S6F11	Tray Move In (CEID:361)
Acknowledge	S6F12 →		
		← S6F11	Tray Process Start
Acknowledge	S6F12→		

8.4.7.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
		If the cassette information is valid, the equipment must report the ‘Ready To Start’ event to host regardless of transfer possible status.	
		← S6F11	Ready To Start
Acknowledge	S6F12 →		
		There is no the Process Start command from the host within Conversation timeout.	
		← S9F13	Conversation Timeout
		Call Operator with buzzer and signal tower	
		The operator changes to OFF-LINE	
		← S6F11	OFF-LINE
Acknowledge	S6F12 →		

8.4.7.3 Operator Select Lot Cancel

Contents	Host	Equipment	Contents
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Contents	Host	Equipment	Contents	
			The port is empty	
		← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →			
			← S6F11 Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →			
			← S6F11 Tray Information Request (CEID: 369)	
Acknowledge	S6F12 →	MVG		
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,		
			← S2F104 Acknowledge	
			There is no the Process Start command from the host within Conversation timeout.	
			← S9F13 Conversation Timeout	
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.	
			If an operator changes to ON-LINE LOCAL.	
			← S6F11 “Equipment ON-LINE LOCAL” Event.	
Acknowledge	S6F12 →			
			An operator activates Lot Cancel before Process Start.	
			← S6F11 Tray Lot Cancel	
Acknowledge	S6F12 →			
			← S6F11 Tray Unload Request	
Acknowledge	S6F12 →			
			CST is unloaded on the port by AGV, Crane.	
			← S6F11 Tray Unload Complete	
Acknowledge	S6F12 →			

8.4.8 Validation NG (S2F41: ON-LINE REMOTE Mode Only)

Contents	Host	Equipment	Contents
			The port is empty

Contents	Host	Equipment	Contents
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
			← S2F104 Acknowledge
Remote Command(Process Start)	S2F41 →		
		← S2F41	Acknowledge(HCACK != 0)
			Call Operator with buzzer and signal tower
		The operator modifies the wrong item in the Start Command from the host.	
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the Tray.	
		← S6F11	Tray Process Start (CEID:365)
Acknowledge	S6F12 →		

8.4.8.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
			← S2F104 Acknowledge
Remote Command(Process Start)	S2F41 →		
		← S2F41	Acknowledge(HCACK != 0)
			Call Operator with buzzer and signal tower
		The operator changes to OFF-LINE	
		← S6F11	OFF-LINE

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		

8.4.8.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		The port is empty	
	← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →		
	← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →		
	← S6F11	Tray Information Request (CEID: 369)	
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
	← S2F104	Acknowledge	
Remote Command(Process Start)	S2F41 →		
	← S2F41	Acknowledge(HCACK != 0)	
		Call Operator with buzzer and signal tower	
		The operator pushes the Lot Cancel button.	
	← S6F11	Tray Lot Cancel	
Acknowledge	S6F12 →		
	← S6F11	Tray Unload Request	
Acknowledge	S6F12 →		
	← S6F11	CST is unloaded on the port by AGV, Crane.	
	← S6F11	Tray Unload Complete	
Acknowledge	S6F12 →		

8.4.9 Conversation Timeout (Cell Information Download)

8.4.9.1 Operator edits Tray Information Data (ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
		The port is empty	
	← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →		
	← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →		
	← S6F11	Tray Information Request (CEID: 369)	

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid, ← S2F104	Acknowledge
Remote Command(Process Start)	S2F41 →	← S2F42	Acknowledge
		← S6F11	Tray Move Out (CEID:360)
Acknowledge	S6F12 →	← S6F11	Tray Move In (CEID:361)
Acknowledge	S6F12 →	← S6F11	Tray Process Start (CEID:365)
Acknowledge	S6F12 →	← S6F11	Cell Information Request(CEID:370)
Acknowledge	S6F12 →		Unresponsiveness....
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.
			The operator Inputs the Cassette Information Data.
			After the operator confirmed the cassette information, the equipment should check the data.
			The operator pushes the Start Button for processing the cassette.
			When the equipment starts the process of the cassette.
		← S6F11	Cell Out Port (CEID:368)
Acknowledge	S6F12 →		

8.4.9.2 Operator changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		

Contents	Host	Equipment	Contents
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge
Remote Command(Process Start)	S2F41 →		
		← S2F42	Acknowledge
		← S6F11	Tray Move Out (CEID:360)
Acknowledge	S6F12 →		
		← S6F11	Tray Move In (CEID:361)
Acknowledge	S6F12 →		
		← S6F11	Tray Process Start (CEID:365)
Acknowledge	S6F12 →		
		← S6F11	Cell Information Request(CEID:370)
Acknowledge	S6F12 →		
		Unresponsiveness....	
		← S9F13	Conversation Timeout
		The equipment calls an operator with buzzer and signal tower	
		The operator changes to OFF-LINE	
		← S6F11	OFF-LINE
Acknowledge	S6F12 →		

8.4.10 Validation NG(Cell Information Download)

8.4.10.1 Operator edits the Tray Information Data

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →	MVG	
Tray Information Download	S2F103 →	If the verification result of cassette info is valid,	
		← S2F104	Acknowledge

Contents	Host	Equipment	Contents
Remote Command(Process Start)	S2F41 →		
		← S2F42	Acknowledge
		← S6F11	Tray Move Out (CEID:360)
Acknowledge	S6F12 →		
		← S6F11	Tray Move In (CEID:361)
Acknowledge	S6F12 →		
		← S6F11	Tray Process Start (CEID:365)
Acknowledge	S6F12 →		
		← S6F11	Cell Information Request(CEID:370)
Acknowledge	S6F12 →		
Cell Information Download	S2F103 →		
		← S2F104	Acknowledge(= 1, 2, 3, 4, 5,7,8,9)
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, operator should edit Cell information.
			The operator changes the wrong data in the cassette information. After modification(or not) for the Cell information, the operator should confirm it.
			The operator pushes the Start Button for processing the Cell.
			When the equipment starts the process of the Cell.
		← S6F11	Cell Out Port (CEID:368)
Acknowledge	S6F12 →		

8.4.10.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
		← S6F11	Tray Information Request (CEID: 369)
Acknowledge	S6F12 →		MVG
Tray Information Download	S2F103 →		If the verification result of cassette info is valid,

Contents	Host	Equipment	Contents
		← S2F104	Acknowledge
Remote Command(Process Start)	S2F41 →		
		← S2F42	Acknowledge
		← S6F11	Tray Move Out (CEID:360)
Acknowledge	S6F12 →		
		← S6F11	Tray Move In (CEID:361)
Acknowledge	S6F12 →		
		← S6F11	Tray Process Start (CEID:365)
Acknowledge	S6F12 →		
Cell Information Download	S2F103 →		
		← S2F104	Acknowledge(= 1, 2, 3, 4, 5,7,8,9)
			The equipment calls an operator with buzzer and signal tower
			The operator changes to OFF-LINE
		← S6F11	OFF-LINE
Acknowledge	S6F12 →		

8.4.11 Conversation Timeout (Empty Permission)

8.4.11.1 Operator edits Tray Information Data (ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
			Unresponsiveness....
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.
			The operator Inputs the Cassette Information Data.
			After the operator confirmed the cassette information,

Contents	Host	Equipment	Contents	
		the equipment should check the data.		
		The operator pushes the Start Button for processing the cassette.		
		When the equipment starts the process of the cassette.		
		← S6F11	Tray Move In (CEID:361)	
Acknowledge	S6F12 →			

8.4.11.2 Operator changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →			
		← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →			
		Unresponsiveness....		
		← S9F13	Conversation Timeout	
		The equipment calls an operator with buzzer and signal tower		
		The operator changes to OFF-LINE		
		← S6F11	OFF-LINE	
Acknowledge	S6F12 →			

8.4.11.3 Operator selects Lot Cancel

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →			
		← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →			
		Unresponsiveness....		
		← S9F13	Conversation Timeout	
		The equipment calls an operator with buzzer and signal tower		
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE		

Contents	Host	Equipment	Contents	
		LOCAL for cancellation of processing.		
		If an operator changes to ON-LINE LOCAL.		
		← S6F11	“Equipment ON-LINE LOCAL” Event.	
		← S6F11	Tray Process Cancel	
Acknowledge	S6F12 →			
		← S6F11	Tray Unload Request	
Acknowledge	S6F12 →			
		← S6F11	Tray Unload Complete	
Acknowledge	S6F12 →			

8.4.12 Validation NG (Empty Permission)

8.4.12.1 Operator edits the Tray Information Data

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	Tray Load Request (CEID=230)	
Acknowledge	S6F12 →			
		← S6F11	Tray Load Complete (CEID=231)	
Acknowledge	S6F12 →			
Empty CST Permission EMPTYCSTPMS = G	S2F105→			
		← S2F106	Acknowledge (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.	
		The equipment calls an operator with buzzer and signal tower		
		If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.		
		The operator changes the wrong data in the cassette information. After modification(or not) for the cassette information, the operator should confirm it.		
		The operator pushes the Start Button for processing the cassette.		
		When the equipment starts the process of the cassette.		
		← S6F11	Tray Move In (CEID:361)	

Contents	Host	Equipment	Contents
Acknowledge	S6F12 →		

8.4.12.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			The operator changes to OFF-LINE
		← S6F11	OFF-LINE
Acknowledge	S6F12 →		

8.4.12.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11	Tray Load Request (CEID=230)
Acknowledge	S6F12 →		
		← S6F11	Tray Load Complete (CEID=231)
Acknowledge	S6F12 →		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.
			The equipment calls an operator with buzzer and signal tower
			If current control state of the equipment is ON-LINE

Contents	Host	Equipment	Contents	
		REMOTE, operator should edit Tray information.		
		If an operator changes to ON-LINE LOCAL.		
		← S6F11	“Equipment ON-LINE LOCAL” Event.	
Acknowledge	S6F12 →			
		The operator pushes the Lot Cancel button.		
		← S6F11	Lot Cancel	
Acknowledge	S6F12 →			
		← S6F11	Tray Unload Request	
Acknowledge	S6F12 →			
		CST is unloaded on the port by AGV, Crane.		
		← S6F11	Tray Unload Complete	
Acknowledge	S6F12 →			

8.5 Abnormal Sequence Un-Packer

8.5.1 Lot Cancel by Host(ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11	Crate Port Load Request(CEID=210)	
Acknowledge	S6F12 →			
		← S6F11	Un-packer Bar Code Data Read (CEID=450)	
Acknowledge	S6F12 →			
A wrong cassette is loaded on the port				
Remote Command (Crate Cancel)	S2F41 →			
		← S6F11	Lot Cancel	
Acknowledge	S6F12 →			
		← S6F11	Crate CST Unload Request(CEID=213)	
Acknowledge	S6F12 →			
		CST is unloaded on the port by AGV, MGV or Crane.		
		← S6F11	Crate CST Unload Complete (CEID=214)	
Acknowledge	S6F12 →			

8.5.2 Conversation Timeout (Remote Command (Bar Code Data (crate-id) result))

8.5.2.1 Operator edits Bar Code Data (ON-LINE REMOTE&ON-LINE LOCAL)

Contents	Host	Equipment	Contents
		The port is empty	
Acknowledge	S6F12 →	← S6F11	Crate Port Load Request(CEID=210)
		← S6F11	Un-packer Bar Code Data Read (CEID=450)
Acknowledge	S6F12 →		
		← S9F13	Conversation Timeout
		The equipment calls an operator with buzzer and signal tower	
		If current control state of the equipment is ON-LINE REMOTE, The EQP should call Operator on use buzzer and pop-up Screen.	
		The operator Inputs the Cassette Information Data.	
		After the operator confirmed the cassette information, the equipment should check the data.	
		The operator pushes the Start Button for processing the cassette.	
		When the equipment starts the process of the cassette.	
		← S6F11	Crate Port Load Complete(CEID=212)
Acknowledge	S6F12 →		
		← S2F501	Work Order Request
Work Order Reply	S2F502 →		
		← S6F11	Remained glass count of Crate Report (CEID=211)
Acknowledge	S6F12 →		
		← S6F11	(N-1)th Glass Out By Indexer (CEID=321)
Acknowledge	S6F12 →		
		← S6F11	(N-1)th Glass In By Unit (CEID=324)
Acknowledge	S6F12 →		
Processing..			
		← S6F11	(N-1)th Glass Out By Unit(CEID=323)
Acknowledge	S6F12 →		
		← S6F3	(N-1)th data(CEID 500)
Acknowledge	S6F4 →		
		← S6F11	(N-1)th Glass In By Indexer(CEID=321)
Acknowledge	S6F12 →		

Last Glass Flow		
	← S6F3	Last glass data(CEID=500)
Acknowledge	S6F12 →	
	← S6F11	Last Glass Out By Indexer(CEID=321)
Acknowledge	S6F12 →	
	← S6F11	Last Glass In By Unit(CEID=324)
Acknowledge	S6F12 →	
Processing..		
	← S6F11	Last Glass Out By Unit(CEID=323)
Acknowledge	S6F12 →	
	← S6F3	Last data(CEID=500)
Acknowledge	S6F4 →	
	← S6F3	Lot data Summary(CEID=501)
Acknowledge	S6F4→	
	← S6F11	Last Glass In By Indexer(CEID=322)
Acknowledge	S6F12 →	
	← S6F103	Cassette Information Upload
Acknowledge	S6F104 →	
	← S6F11	Crate CST Unload Request(CEID=213)
Acknowledge	S6F12 →	
	CST is unloaded on the port by AGV, MGV or Crane.	
	← S6F11	Crate CST Unload Complete (CEID=214)
Acknowledge	S6F12 →	

8.5.2.2 Operator changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Crate Port Load Request(CEID=210)
Acknowledge	S6F12 →		
		← S6F11	Un-packer Bar Code Data Read (CEID=450)
Acknowledge	S6F12 →		
		← S9F13	Conversation Timeout
			The equipment calls an operator with buzzer and signal tower

		The operator changes to OFF-LINE The equipment calls an operator with buzzer and signal tower	
		← S6F11	OFF-LINE
Acknowledge	S6F12→		

8.5.2.3 *Operator selects Lot Cancel*

Contents	Host	Equipment	Contents	
		The port is empty		
		← S6F11 Crate Port Load Request(CEID=210)		
Acknowledge	S6F12 →			
		← S6F11	Un-packer Bar Code Data Read (CEID=450)	
Acknowledge	S6F12 →			
		← S9F13	Conversation Timeout	
		The equipment calls an operator with buzzer and signal tower		
		If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.		
		If an operator changes to ON-LINE LOCAL.		
		← S6F11	“Equipment ON-LINE LOCAL” Event.	
Acknowledge	S6F12 →			
		The operator pushes the Lot Cancel button		
		← S6F11	Process Cancel(CEID=304)	
Acknowledge	S6F12 →			
		← S6F11	Crate CST Unload Request(CEID=213)	
Acknowledge	S6F12 →			
		CST is unloaded on the port by AGV, MGV or Crane.		
		← S6F11	Crate CST Unload Complete (CEID=214)	
Acknowledge	S6F12 →			

8.5.3 Validation NG (S2F103)

8.5.3.1 Operator edits the Cassette Information Data

Contents	Host	Equipment	Contents	
			The port is empty	
		← S6F11	Crate Port Load Request(CEID=210)	
Acknowledge	S6F12 →			
			← S6F11 Un-packer Bar Code Data Read (CEID=450)	
Acknowledge	S6F12 →			
Remote Command (Bar Code Data (crate-id) result)	S2F41→			
			← S2F42 CIACK (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.	
			Edit BarCode Data And Star By Operator	
			← S6F11 Crate Port Load Complete(CEID=212)	
Acknowledge	S6F12 →			
			← S2F501 Work Order Request	
Work Order Reply	S2F502 →			
			← S6F11 Remained glass count of Crate Report (CEID=211)	
Acknowledge	S6F12 →			

8.5.3.2 Operator Changes ON-LINE MODE to OFF-LINE

Contents	Host	Equipment	Contents	
			The port is empty	
		← S6F11	Crate Port Load Request(CEID=210)	
Acknowledge	S6F12 →			
			← S6F11 Un-packer Bar Code Data Read (CEID=450)	
Acknowledge	S6F12 →			
Remote Command (Bar Code Data (crate-id) result)	S2F41→			
			← S2F42 CIACK (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info	
			The equipment calls an operator with buzzer and signal tower	

		The operator changes to OFF-LINE	
		← S6F11 OFF-LINE	
Acknowledge	S6F12→		

8.5.3.3 Operator Selects Lot Cancel

Contents	Host	Equipment	Contents
		The port is empty	
		← S6F11 Crate Port Load Request(CEID=210)	
Acknowledge	S6F12 →		
		← S6F11 Un-packer Bar Code Data Read (CEID=450)	
Acknowledge	S6F12 →		
Remote Command (Bar Code Data (crate-id) result)	S2F41→		
		← S2F42 CIACK (= 1, 2, 3, 4, 5,7,8,9) The equipment is received a wrong info.	
		The equipment calls an operator with buzzer and signal tower	
		If current control state of the equipment is ON-LINE REMOTE, operator should edit cassette information.	
		If an operator changes to ON-LINE LOCAL.	
		← S6F11 “Equipment ON-LINE LOCAL” Event.	
Acknowledge	S6F12→		
		The operator pushes the Lot Cancel button.	
		← S6F11 Crate CST Unload Request(CEID=213)	
Acknowledge	S6F12 →		
		CST is unloaded on the port by AGV, MGV or Crane.	
		← S6F11 Crate CST Unload Complete (CEID=214)	
Acknowledge	S6F12 →		

8.5.4 Lot Cancel by Operator

8.5.4.1 Lot Cancel by Operator at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
		The port is empty	

		← S6F11	Crate Port Load Request(CEID=210)
Acknowledge	S6F12 →		
		← S6F11	Un-packer Bar Code Data Read (CEID=450)
Acknowledge	S6F12 →		
Remote Command (Bar Code Data (crate-id) result)	S2F41→		
		← S2F42	Acknowledge (HCACK) error
			If current control state of the equipment is ON-LINE REMOTE, operator should change to ON-LINE LOCAL for cancellation of processing.
			If an operator changes to ON-LINE LOCAL.
		← S6F11	“Equipment ON-LINE LOCAL” Event.
Acknowledge	S6F12 →		
.			An operator activates Lot Cancel before Process Start
		← S6F11	Crate CST Unload Request(CEID=213)
Acknowledge	S6F12 →		
			CST is unloaded on the port by AGV, MGV or Crane.
		← S6F11	Crate CST Unload Complete (CEID=214)
Acknowledge	S6F12 →		

8.5.4.2 Lot Cancel by Operator at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
			The port is empty
		← S6F11	Crate Port Load Request(CEID=210)
Acknowledge	S6F12 →		
		← S6F11	Un-packer Bar Code Data Read (CEID=450)
Acknowledge	S6F12 →		
Remote Command (Bar Code Data (crate-id) result)	S2F41→		
		← S2F42	Acknowledge
		← S6F11	Crate CST Unload Request(CEID=213)
Acknowledge	S6F12 →		
			CST is unloaded on the port by AGV, MGV or Crane.

		← S6F11	Crate CST Unload Complete (CEID=214)
Acknowledge	S6F12 →		

8.5.5 Process Abort

8.5.5.1 Process Abort by Operator at Online Mode

Contents	Host	Equipment	Contents
		← S6F11	Process Start
Acknowledge	S6F12 →		
In processing...before Lot End			
		← S6F11	An operator activates Process Abort in processing
		← S6F11	Process Abort
Acknowledge	S6F12 →		
		← S6F3	Lot data Summary(CEID 501) for only processed
Acknowledge	S6F12 →		
		← S6F11	Process Cancel(CEID=304)
Acknowledge	S6F12 →		
		← S6F11	Tray Process End (CEID: 362)
Acknowledge	S6F12 →		
		← S6F11	Crate CST Unload Request(CEID=213)
Acknowledge	S6F12 →		
			CST is unloaded on the port by AGV, MGV or Crane.
		← S6F11	Crate CST Unload Complete (CEID=214)
Acknowledge	S6F12 →		

8.5.6 Empty Cassette - UnloadPort

8.5.6.1 Loading Empty Cassette at ON-LINE REMOTE Mode

Contents	Host	Equipment	Contents
			A CST is loaded on the port by AGV, OHT or Crane.

		And CST Sensor on	
		Then read the CSTID.	
		← S6F11	CST Load Complete(PTTYPE=PU)
Acknowledge	S6F12→		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge
		The EQP start to insert glasses to empty CST.	

8.5.6.2 Loading Empty Cassette at ON-LINE LOCAL Mode

Contents	Host	Equipment	Contents
			A CST is loaded on the port by AGV, OHT or Crane. And CST Sensor on
			Then read the CSTID.
		← S6F11	CST Load Complete(PTTYPE=PU)
Acknowledge	S6F12→		
Empty CST Permission EMPTYCSTPMS = G	S2F105→		
		← S2F106	Acknowledge
		The EQP start to insert glasses to empty CST.	

8.5.6.3 Cancel Empty Cassette

Contents	Host	Equipment	Contents
			PTTYPE :PU
		← S6F11	CST Load Request
Acknowledge	S6F12→		
			Then read the CSTID.
		← S6F11	CST Load Complete
Acknowledge	S6F12→		
Empty CST Permission EMPTYCSTPMS = C	S2F105→		
		← S2F106	Acknowledge
		← S6F11	Lot Cancel
Acknowledge	S6F12→		
		← S6F11	CST Unload Request
Acknowledge	S6F12→		

		← S6F11	CST Unload Complete
Acknowledge	S6F12→		

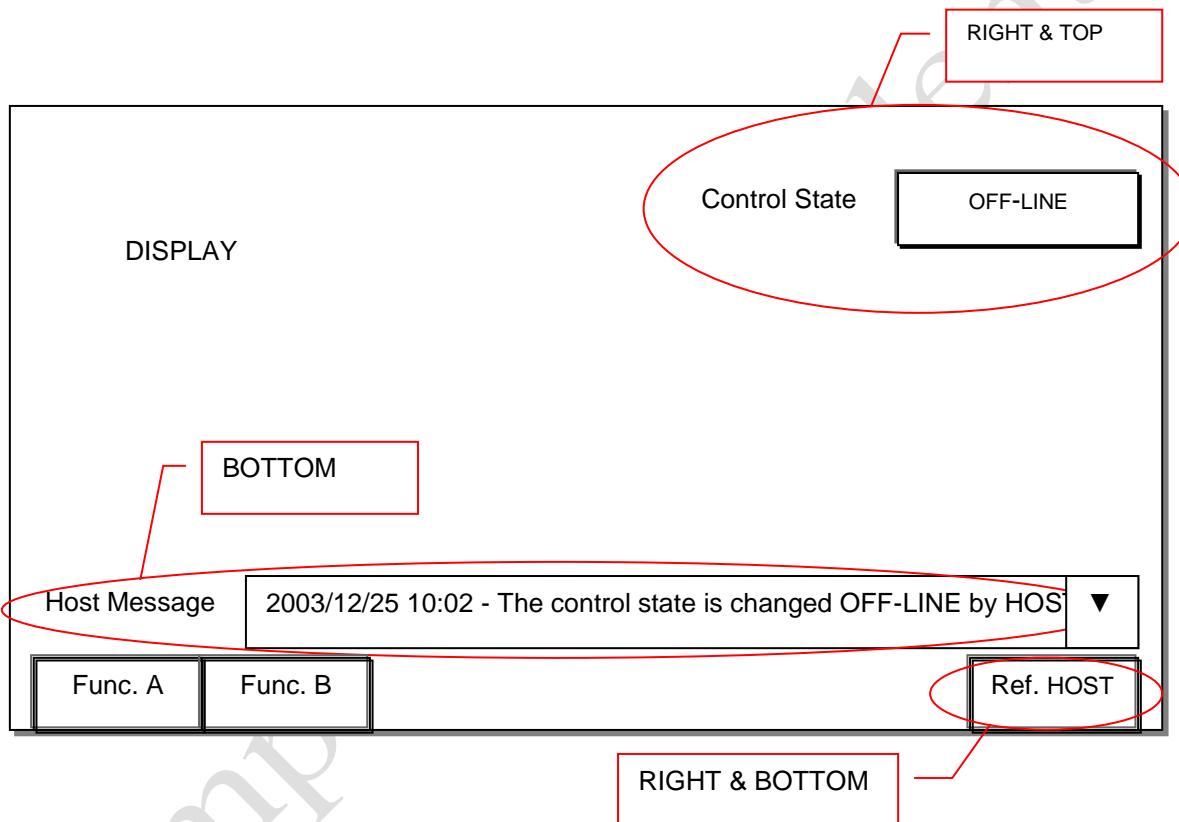
Company Confidential

9 EQUIPMENT FRONT PANEL (Related to CIM)

The “equipment front panel” refers to an area on the equipment that is available to the operator under normal use. This may include a Display panel, keyboard, switches, and signal lights. Some capabilities in GEM may be implemented in either hardware (buttons, switches, lights) or in a software/display panel equivalent.

9.1 Display

We **strongly** suggest equipment maker should follow our suggestion to show all the CIM information as the following picture. Regarding online parameter, we suggest should have security control like password.



9.1.1 Displaying the Control State

The equipment shall supply an indicator on the front panel which displays the full identification of the current Control State. And this indicator is visible **at all times**.

9.1.2 Displaying the Transportation State

We hope the equipment can display Transportation Mode of AUTO / MANUAL for AGV, OHT/OHS, or STK Interface. And also, can display the information

9.1.3 Displaying the Operation Screen

Whole Remote command (S2F103) should be prepared in Control Panel as GUI.

The equipment must support GUI (Graphic User Interface) in basic operation

- ① CSTID, LOTID, PPID, STEP, GLASS input field.
- ② GLSID & Slot Information... etc.... input field (if necessary)
- ③ Each Status of Port & CST(LOT)
- ④ The operation screen of the equipment must be discussed among the equipment maker and factory engineers before programming.

9.1.3.1 Button (or Switch) Color Definitions

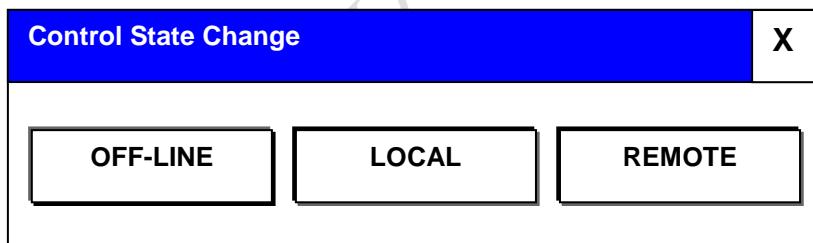
Classification	Text	Background Color	Remark
Control State	OFF-LINE ON-LINE REMOTE ON-LINE LOCAL	WHITE GREEN YELLOW	
Transportation State	AUTO MANUAL	GREEN WHITE	

9.1.3.2 Host Message Display

We hope the **new host message** which should include date and time is displayed.

Display about Sub Screens or Menus

- 4 When the operator clicks to **Control State button**



- 4 When the operator clicks to **Host Message button**

Host Terminal Message

X

FROM HOST

2010/11/25 10:02 – The control state is changed OFF-LINE by HOST

2010/11/25 09:02 – Lot Cancel by host as mismatch step

Please check the Lot Information

2010/11/25 08:52 – Lot Cancel by host as mismatch step

Please check the Lot Information

At least 10 Messages

TO HOST

Please check the Network

SEND

CLEAR

- 4 When the operator clicks to **Ref. HOST button**

Ref. HOST Selection

X

LOG VIEW

CONFIG

- 4 When the operator clicks to **CONFIG button**

HSMS Parameter Setting		X	
Connection Mode	<input type="text"/>	T3 Timeout	<input type="text"/>
Local IP Address	<input type="text"/>	T5 Timeout	<input type="text"/>
Remote IP Address	<input type="text"/>	T6 Timeout	<input type="text"/>
Local IP Port	<input type="text"/>	T7 Timeout	<input type="text"/>
Remote IP Port	<input type="text"/>	T8 Timeout	<input type="text"/>
Link Test Timer	<input type="text"/>	Device ID	<input type="text"/>
	<input type="button" value="SET"/>		<input type="button" value="DEFAULT"/>

10 DOCUMENTATION

The equipment vendor must submit the follow:

- CIM I/F Counter SPEC which is included of HSMS SPEC.
- System Configuration (Logical & Physical) Diagram
- EQP layout diagram
- Alarm List (Must be Level is separated) .
- Documentation of PPID Parameter Structure.
- SV, DV, EC List for Data Collection
- TID List (Terminal ID)
- Operation Manual for CIM Engineer
- Etc.

Appendix: Equipment Constant List

ECID	ECNAME	Units	Format	Min	Max	Default	Description
2	CONTROL STATE KEEPING TIME	Sec	A	0	600	0	<p>1) Although HSMS connection was disconnected with host, if HSMS connection is re-connected within CONTROL STATE KEEPING TIME, equipment should keep current control state.</p> <p>2) If HSMS connection is not re-connected within CONTROL STATE KEEPING TIME, equipment should change control state to OFF-LINE.</p> <p>3) If CONTROL STATE KEEPING TIME is 0(zero), equipment should change control state to OFF-LINE immediately when HSMS connection is disconnected.</p> <p>4) If HSMS connection is re-connected after CONTROL STATE KEEPING TIME, equipment should change to GEM INITIAL CONTROL STATE (if GEM INITIAL CONTROL STATE is ON-LINE LOCAL or REMOTE, equipment should execute Operator Initiates Scenario).</p>
3	GEM INITIAL CONTROL STATE		A	0	2	O	<p>EQUIPMENT DEFAULT CONTROL STATE. Specifies the Equipment's default control state after a power on.</p> <p>If GEM INITIAL CONTROL STATE is ON-LINE LOCAL or REMOTE, equipment should execute Operator Initiates Scenario.</p> <p>O: OFF-LINE L: ON-LINE LOCAL R: ON-LINE REMOTE</p>
4	DEVICEID		A	0	32000	0	Device ID
5	HEARTBEAT	Sec	A	0	99	0	Length of delay in the range of 0 – 99 seconds, between the S1F1 being sent to the Host. Setting to 0 disables heartbeat.
6	T3	Sec	A	1	120	45	SECS transaction timer timeout in seconds
7	T5	Sec	A	1	240	10	Connect Separation Timeout Specifies the amount of time which must elapse between successive attempts to connect to a given remote entry.
8	T6	Sec	A	1	240	5	Control Transaction Timeout Specifies the time which a control transaction may remain open before it is considered a communications failure.
9	T7	Sec	A	1	240	10	NOT SELECTED Timeout Time which a TCP/IP connection can remain in NOT SELECTED state (i.e., no HSMS activity) before it is considered a communications failure.
10	T8	Sec	A	1	120	5	Network Inter-character Timeout Maximum time between successive bytes of a single HSMS message which may expire

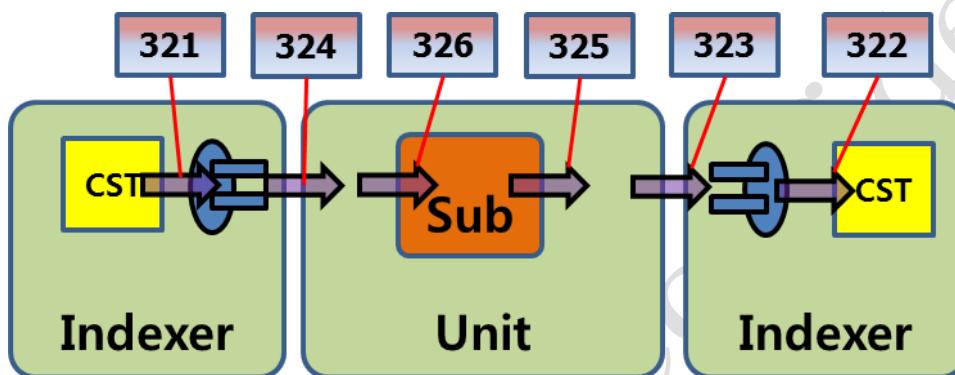
云谷（固安） 科技有限公司	Common Equipment Communication Specification for CIM Program						
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ECID	ECNAME	Units	Format	Min	Max	Default	Description
							before it is considered a communications failure.
11	CONVERSATION TIMEOUT	Sec	A	1	600	60	Conversion Timeout
12	VCR STATUS		A	1	2	1	1: On – Skip 2: On – Key In 3: Off – Skip 4: Off – Key In
21~40	PxxTRSMODE (P01TRSMODE, P02TRSMODE, P03TRSMODE, P04TRSMODE...)		A	1	2	1	<p>Transfer Mode Value</p> <p>1: AUTO (AGV or STK), 2: Manual(MGV)</p> <p>* Setting Port TRS Mode * Port Mode, ECID count and Port count and are Same. Ex) IF number of Port: 4 Port P01TRSMODE, P02TRSMODE, P03TRSMODE, P04TRSMODE...</p>
41~60	PxxTYPE (P01TYPE, P02TYPE, P03TYPE, P04TYPE ...)		A	None	None	PB	<p>Port Type Value</p> <p>PB: Both Port(Load/Unload), PL: Load Port, PU: Unload Port, BB: Both Buffer(Load/Unload), BL: Load Buffer, BU: Unload Buffer</p> <p>* Setting Port Type * Port Type, ECID count and Port count and are Same. Ex) IF number of Port: 4 Port P01TYPE, P02TYPE, P03TYPE, P04TYPE...</p>
61~80	PxxUSETYPE (P01USETYPE, P02USETYPE, P03USETYPE, P04USETYPE...)		A	None	None	OA	<p>Port Use Type Value</p> <p>OA: OK All (or Source), DM: DuMmy, GG: Good, NG: Not Good, RW: Rework, RP: RePair, SC: Scrap.</p> <p>The follows are only used in the Cell Inline Equipment – PI/Rubbing/Assembly</p> <p>OT: OK-LTPS, OF: OK – BP, ID: ITO Dummy, BD: Bare Dummy, TD: Bare TN Dummy, FD: Bare FFS Dummy, UD: UV Mask Dummy. BP: Bare + PI Coating Dummy, IP: ITO + PI Coating Dummy, ND: ITO NIP Dummy.</p> <p>REMARK: A USETYPE DATA append possible at the</p>

ECID	ECNAME	Units	Format	Min	Max	Default	Description
							future. * Setting PortUseType * PortUseType, ECID count and Port count and are Same. Ex) IF number of Port: 4 Port P01USETYPE, P02USETYPE, P03USETYPE, P04USETYPE...
81-99	Reserved						

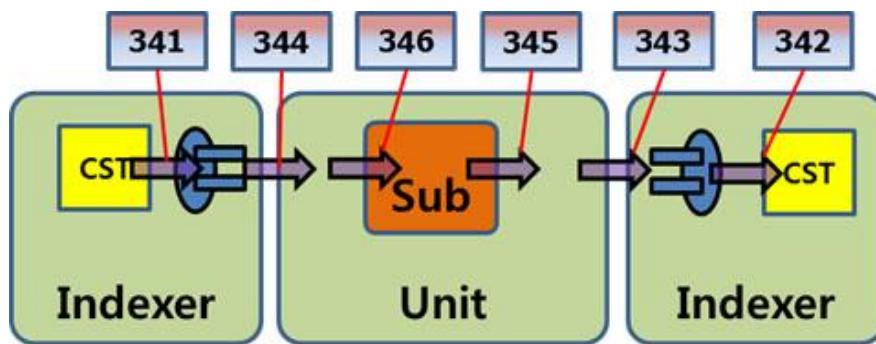
#ECID = 0 is a Sample data.

※ If equipment's vendor wants to add any equipment constant, use the number of more than 100.

Appendix: Glass Component In/Out sequence diagram

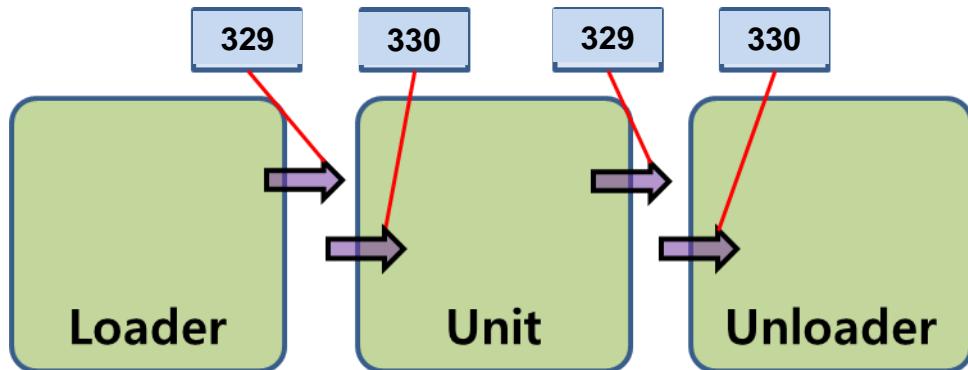
Reference: Glass track In/Out message table

Component	CEID	Direction	Message name
Indexer	321	Out	Glass Out By Indexer
	322	In	Glass In By Indexer
Unit	323	Out	Glass Out By Unit
	324	In	Glass In By Unit
Sub Unit	325	Out	Glass Out By Sub-Unit
	326	In	Glass In By Sub-Unit
Sub-Sub Unit	327	Out	Glass Out By Sub-Sub-Unit
	328	In	Glass In By Sub-Sub-Unit

Appendix: Mask Component In/Out sequence diagram

Reference: Mask track In/Out message table

Component	CEID	Direction	Message name
Indexer	341	Out	Mask Out By Indexer
	342	In	Mask In By Indexer
Unit	343	Out	Mask Out By Unit
	344	In	Mask In By Unit
Sub Unit	345	Out	Mask Out By Sub-Unit
	346	In	Mask In By Sub-Unit

Appendix: CST Component In/Out sequence diagram

Refer: Component track In/Out message table. In this EQP use same message Loader, Unloader and unit.

Component	CEID	Direction	Message name
Unit	329	Out	CST Out By Unit
	330	In	CST In By Unit

- End of document -