**Common Equipment**

**HSMS Communication Specification**

**for CIM Program**

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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**

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| **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 |  | 1.Added Stream Function and Scenario  (1) Added Mask Offset Information Download(S2F119)  (2) Added Job Reservation Command(S2F121)  (3) Added Job Reservation Reset Request(S6F121)  (4) Added Remind Job Start Signal(S2F123)  (5) Added Port PPID Send(S2F131)  (6) Added Glass Call Data Request(S6F131)  (7) Added CEID=502, Mask Process Data  (8) Added CEID=312, Last Mask Process Start  2. Added “MaskID” Item for CEID=335, 336, 337  3. Added Loading Stop(S2F401)  4. 8.1.4 Mask Cleaner Scenario Modify  5. Added Processing Flag  6. Modify Description GLSTYPE, MATERIALTYPE  7. S6F11 CEID=335 , 336 , 337 Glass Process Start/Abort/End create  8. Added Scrap Code content.  9. Tray Process Start CEID Change ( CEID=366 -> CEID =365)  10. Batch Tray Process END CEID Change ( CEID=365 -> CEID =366)  11. S2F301/S2F302 Mask Eject Request Added  12. S2F501/502 Work Order Request Added | AIM | 2017-12-12 |
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| **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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# INTRODUCTION

## 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, weather it is specification discrepancy or software bug, Customer can change the specification without any charge by vendor.***

## Scope

### 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.

### 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.

### 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.

## 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.

## Unit Type

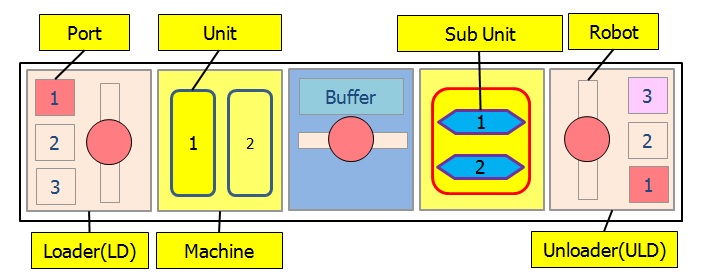
The unit types are divided into 4 types according to function.

* 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.

## 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, un-loader, 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)



**Sub-Sub-Unit**

**Unit**

**Sub-Unit**

*Figure 1-1 Unit Structure*

## 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.

## 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).

## 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.

### 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.

### 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.

### 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.

### PPARMVALUE (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.

### Mask ID

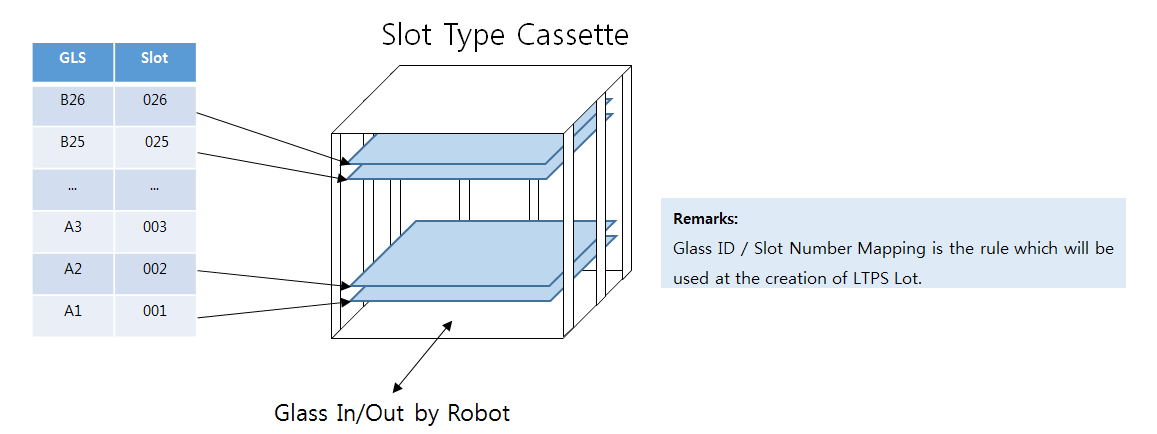
* Meaning: Mask Identification or Mask number used at exposure unit
* Format: ASCII
* Length: **30 Bytes**
* Description: The mask id may be used to verify that the equipment which has some exposure units has a mask that is correctly set up.

### 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).

### 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)



### 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.

### Unit ID

* Meaning: Unit Identification
* Format: ASCII
* Length:**10 Bytes**
* Description: In-Line / Multi Type EQP. Follow unit ID rule of each equipment.

### 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.

### SSub Unit ID

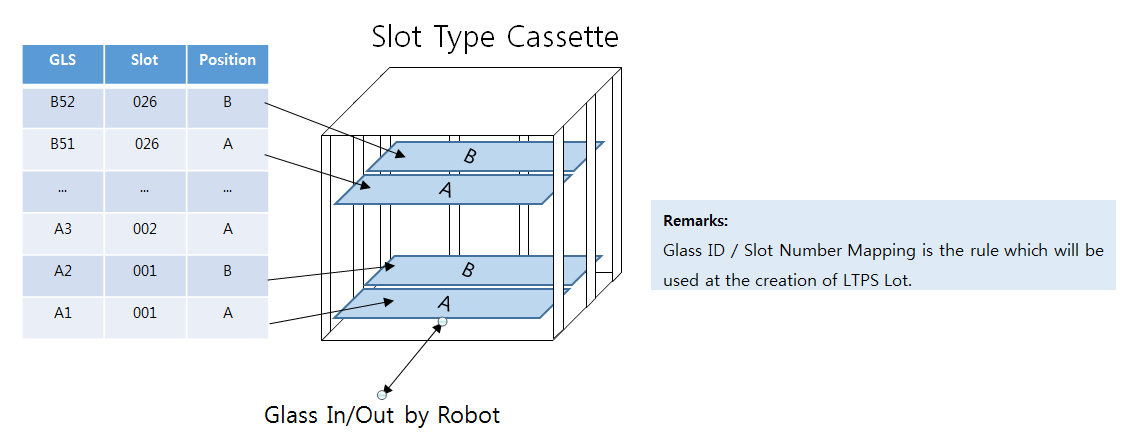
* Meaning: Sub-Sub-Unit Identification (It also used for chamber type sub unit.)
* Format: ASCII
* Length:20 Bytes
* Description: Sub-Sub-Units are the components at the lower level of Unit. Sub-Sub-Unit has a material location and performs some task on material.

### Material ID

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

### 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)



# HSMS SPECIFICATION

## Connection State Model

### Purpose

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

### Diagram

**NOT CONNECTED**

**SELECTED**

**CONNECTED**

**1**

**NOT SELECTED**

**2**

**3**

**4**

**5**

**6**

### 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 |  |

### 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 | | |

#### ▪ 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.

#### ▪ 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.

#### ▪ 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.

#### ▪ 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.

#### ▪ 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 T8are 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.

#### ▪ 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.

#### ▪ 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.

#### ▪ 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.

#### ▪ 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.

# SECS-II MESSAGE SUMMARY

## 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 |  |
| 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) |  |
| Tray Information Download (Tray) |  |
| 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) |  |
| 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 |  |
| 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 |  |
| 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) |  |
| 9 | 13 | - | H🡨E | Conversation Timeout (CTN) |  |
| 10 | 1 | 2 | H🡨E | Terminal Request |  |
| 10 | 5 | 6 | H🡪E | Terminal Display, Multi-block (VTN) |  |

# DATA ITEM DEFINITIONS

## 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 = “XXAXXAAXXXXAXA...”**  **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 | | | |
| **Where Used: S2F103, S6F103** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **ATGLSGRADE** | **Array Test Glass Grade** | **1** | **20** |
| (EX) A, B, C | | | |
| **Where Used: S2F103, S6F103** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **ATREPAIR** | **Array Test Repair** | **5** | **20** |
| (EX) G: Good, N: NG | | | |
| **Where Used: S2F103, S6F103** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **BARCODEDATA** | **Unpacker crate boxID** | **20** | **20** |
| Unpack Crate cassette barcode Data | | | |
| **Where Used: S6F11** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **BARCODEDATARESULT** | **Unpacker crate boxID check result** | **1** | **20** |
| **0**: OK  **1**: NG | | | |
| **Where Used: S2F41** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **BOXID** | **Packing Box ID** | **20** | **20** |
| This item use at Packing EQP only. | | | |
| **Where Used: 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. | | | |
| **Where Used: S2F37** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **CEID** | **Collected event ID** | **3** | **20** |
| Refer to 5.3.1.2. EVENT DATA COLLECTION. | | | |
| **Where Used: 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 | | | |
| **Where Used: S2F104** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **CMST** | **Communication State** | **1** | **20** |
| 0: Enabled, 1: Disabled | | | |
| **Where Used: S6F11** | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **COMMACK** | **Communication Acknowledge** | **1** | **20** |
| 0: Enabled, 1: Disabled | | | |
| **Where Used: S1F14** | | | |

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

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

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

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| **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** | | | |

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| **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** | | | |

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

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| **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** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **CUTGLSJUDGE** | **Cut glass judge** | **1** | **20** |
| **G**: **G**ood,  **N**: **N**ot Good,  **R**: **R**ework,  **P**: Re**P**air,  **S**: **S**crap.  **F**: **F**ault  **V**: Virtual  **I:** Inspection | | | |
| **Where Used: S6F11** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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 | | | |
| **Where Used: S2F106** | | | |

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

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

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

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

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

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| **Item Name** | **Description** | **Byte** | **Format** |
| **E****DID** | **Expected Data Identification** | **6** | **20** |
| Fill this item with port ID which conversation timeout occurs.  Example 🡪 ‘P01’, ‘P02’… | | | |
| **Where Used: S9F13** | | | |

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| **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** | | | |

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

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **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** | | | |

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

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **G****LSJUDGE** | **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**: **G**ood,  **N**: **N**ot Good,  **R**: **R**ework,  **P**: Re**P**air,  **S**: **S**crap.  **F**: **F**ault  **V**: Virtual  **I:** Inspection  \* Special case: | | | |
| **Where Used: S2F103, S6F11, S6F103** | | | |

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| **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** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **GLSTHK** | **Thickness** | **5** | **20** |
| -Glass Thickness information | | | |
| **Where Used: S2F103, S6F103, S6F11** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **GLSTYPE** | **Glass Type** | **1** | **20** |
| The type of the Glass  **L** : **L**TPS,  **E** : **E**ncap,  **O** : **O**LED,  **N** : **N**ormal Dummy,  **B** : **B**are Dummy,  **T** : **T**ooling Dummy  **S** : **O**ffset Dummy  **P** : **P**I Dummy  **K** : **K**ey Dummy  **C** : TFE **C**VD Dummy  **J** : TFE Ink**j**et Dummy  **M** : Manual Dummy  **I** : **I**TO Dummy  **Z** : IG**Z**O Dummy | | | |
| **Where Used: S2F103, S6F103** | | | |

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| **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 **E**rrors.  **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **HOSTMSG** | **Host Message** | **20** | **20** |
| MES or EAP message. It expresses in English text message. | | | |
| **Where Used: S2F109** | | | |

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| **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 selected by host when received S2F103 message)  Remark:  (EX) “**4444444444888888888855555555550000000000000000000000**”  01~05: **Normal** End  06~10: Skip  11 ~ 15: Abort  16~26: Empty | | | |
| **Where Used: S1F6** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **ICSTID** | **Input Cassette ID** | **20** | **20** |
| Loader CST ID | | | |
| **Where Used: S6F11** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **IPTID** | **Input Port ID** | **3** | **20** |
| Loader Port ID | | | |
| **Where Used: S6F11** | | | |

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| **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 | | | |
| **Where Used: S6F11** | | | |

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| **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. | | | |
| **Where Used: S2F103, S6F103** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **LOTJUDGE** | **Lot Judge** | **1** | **20** |
| - Host makes this value and send to EQP throughS2F103 message.  - The EQP send same value when report S6F103.  **G**: **G**ood  **N**: **N**ot Good  **R**: **R**ework  **P**: Re**P**air  **H**: **H**old  **V**: **V**irtual  **I:** **I**nspection | | | |
| **Where Used: S2F103, S6F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **LSST** | **Loading Stop Status** | **1** | **20** |
| Loading Stop Status  1: Request  2: Release | | | |
| **Where Used: S2F401** | | | |

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| **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 | | | |
| **Where Used: S2F401** | | | |

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

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| **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** | | | |

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

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

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

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

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKID** | **Mask ID** | **30** | **20** |
| Mask id | | | |
| **Where Used: S1F6, S2F109, S6F11, S6F3** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKINSPSTATE** | **Mask INSP state** | **10** | **20** |
| Mask INSP state  N: Not Good  G: Good | | | |
| **Where Used: S6F11** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKINSUNITID** | **Mask input Sub-Unit ID** | **20** | **20** |
| Evaporation | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKJUDGE** | **Mask Judge** | **1** | **20** |
| G: Good  N: NG  R: Rework  P: Repair  S: Scrap | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKMAGNET** | **Mask Magnet** | **10** | **20** |
|  | | | |
| **Where Used: S2F109, S6F11, S6F109** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKMAXCNT** | **Mask Maximum usable count** | **5** | **20** |
| Mask maximum usable count | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKMODELNO** | **Mask Model No** | **2** | **20** |
| Mask model number | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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

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| --- | --- | --- | --- |
| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKTHICKNESS** | **Mask THICKNESS** | **5** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKTYPE** | **Mask TYPE** | **10** | **20** |
| Ex) FMM, CMM | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKSPEC** | **Mask product spec** | **30** | **20** |
|  | | | |
| **Where Used: S2F109, S6F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MASKUSECNT** | **Mask Used Count** | **5** | **20** |
| Mask Used Count | | | |
| **Where Used: S1F6, S2F109, S6F11, S6F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MATERIALID** | **Material ID** | **30** | **20** |
| Material Identification. | | | |
| **Where Used: S1F6, S6F11** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **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) | | | |
| **Where Used: S1F6, S6F11** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **MATERIALUSEDCNT** | **Material used count** | **10** | **20** |
| Material used count | | | |
| **Where Used: S1F6, S6F11** | | | |

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| --- | --- | --- | --- |
| **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. | | | |
| **Where Used: S2F110** | | | |

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

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| **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** | | | |

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| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETCALCT** | **Mask Calculation OFFSET Theta** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETCALCX** | **Mask Calculation OFFSET X** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETCALCY** | **Mask Calculation OFFSET Y** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETREFT** | **Mask Reference OFFSET Theta** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETREFX** | **Mask Reference OFFSET X** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETREFY** | **Mask Reference OFFSET Y** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETT** | **Mask OFFSET T** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETX** | **Mask OFFSET X** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFFSETY** | **Mask OFFSET Y** | **10** | **20** |
|  | | | |
| **Where Used: S2F109** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **OFLACK** | **OFF-LINE Acknowledge Code** | **1** | **20** |
| 0: Accepted, 1: Not Accepted | | | |
| **Where Used: S1F16** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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

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

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **PAIRPRODTYPE** | **Pair Product Type** | **20** | **20** |
| It distinguishes between Engineering Lot, Test Lot etc. | | | |
| **Where Used: S2F103, S6F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **PAIRRGLSID** | **Pair Read Glass ID** | **20** | **20** |
| Encap Glass ID Read by VCR | | | |
| **Where Used: S6F11** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **PAIRSLOTNO** | **Pair Glass Slot Number** | **2** | **20** |
| Pair Glass Slot Number | | | |
| **Where Used: S6F11** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **PANELJUDGE** | **Sheet in Panel judge list** | **800** | **20** |
| Panel judge code list  Ex) GGNNGGGRPGGGG……. | | | |
| **Where Used: S6F103** | | | |

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| **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 | | | |
| **Where Used: S2F105** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **PPARMNAME** | **Process Parameter Name** | **40** | **20** |
| Recipe item name | | | |
| **Where Used: S7F26** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **PPARMVALUE** | **Process Parameter Value** | **40** | **20** |
| Recipe value | | | |
| **Where Used: S7F26** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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

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

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

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| **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** | | | |

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| **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** | | | |

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| **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. | | | |
| **Where Used: S1F6, S6F11** | | | |

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| **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. | | | |
| **Where Used: S1F6, S2F103, S6F11, S6F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **QGLSJUDGELIST** | **Sheet in Q-glass judge list** | **10** | **20** |
| Judge List  Ex) GRGN…. | | | |
| **Where Used: S6F103** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **QTY** | **Quantity** | **3** | **20** |
| The quantity of glass or cell quantity in cassette or tray. | | | |
| **Where Used: S2F41, S2F103, S6F103, S6F203** | | | |

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| **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** | | | |

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

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| **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** | | | |

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| **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** | | | |

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

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| **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** | | | |

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

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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

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| **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** | | | |

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| **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) “**44444888885555500000000000**”  01~05: **Normal** End  06~10: Skip  11 ~ 15: Abort  16~26: Empty | | | |
| **Where Used: S1F6** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SLOTMAP** | **Slot Map info.** | **26** | **20** |
| Existence of the Glass at the slot.  \* SLOTMAP = ‘**OOXOOOOXOOOOOOOOOOOOXXXXOO**’  🡪 The meaning of ‘**O**’ is ‘Existence’ and ‘**X**’ is ‘Not Existence’. | | | |
| **Where Used: S6F11** | | | |

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| **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** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SLOTSEL** | **Slot Select. will be Processed** | **26** | **20** |
| \* SLOT = **‘OOOOXXXXXXXXXXXXXXXX’**  🡪 The mean of ‘**O**’ is ‘selected’ and ‘**X**’ is ‘deselected’. | | | |
| **Where Used: S2F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **HSLOTSEL** | **Half Slot Select. will be Processed** | **52** | **20** |
| \* SLOT = **‘OOOOXXXXXXXXXXXXXXXXOOOOXXXXXXXXXXXXXXXX’**  🡪 The mean of ‘**O**’ is ‘selected’ and ‘**X**’ is ‘deselected’. | | | |
| **Where Used: S2F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SMPLFLAG** | **Sample Flag** | **1** | **20** |
| **Y**: Selected,  **N**: Not Selected. | | | |
| **Where Used: S2F103, S6F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SMPLN** | **Sample Number,** | **5** | **20** |
| The order number of trace data.  SMPLN will be increased sequentially. | | | |
| **Where Used: S6F1** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SOFTREV** | **Software revision code** | **6** | **20** |
| Software revision code 6 bytes maximum. | | | |
| **Where Used: S1F2, S1F13, S7F1, S7F26** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SORTERJOBST** | **Sorter Job status** | **1** | **20** |
| R: Running  W: Waiting  C: Cancelling  A: Aborting | | | |
| **Where Used: S1F6** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **SORTSCRAPFLAG** | **Glass Scrap flag** | **1** | **20** |
| **Y**: Glass in Scrap-Port  **N**: Not Scrap | | | |
| **Where Used: S2F103, S6F103** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **SORTTURNFLAG** | **Glass turn flag** | **1** | **20** |
| **Y**: Glass turn (180 rotation)  **N**: Not turn | | | |
| **Where Used: S2F103, S6F103** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SSLOTNO** | **Sub Unit Slot Number** | **2** | **20** |
| Sub-Unit internal slot number.  (EX) 01, 02 | | | |
| **Where Used: S1F6, S6F11** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **SUNITID** | **Sub-Unit Identification** | **20** | **20** |
|  | | | |
| **Where Used: S1F6, S6F11** | | | |

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| --- | --- | --- | --- |
| **Item Name** | **Description** | **Byte** | **Format** |
| **SSUNITID** | **Sub-Sub-Unit Identification** | **20** | **20** |
|  | | | |
| **Where Used: S1F6, S6F11** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SUNITMASKID** | **Sub-Unit Mask ID** | **30** | **20** |
| mask-Id is contained in Sub-Unit | | | |
| **Where Used: S1F6** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SUNITMASKUSECNT** | **Sub-Unit Mask Used Count** | **5** | **20** |
| Mask Used Count is contained in Sub-Unit | | | |
| **Where Used: S1F6** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| --- | --- | --- | --- |
| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SV** | **Status Variable Value** | **40** | **20** |
| Status variable value. | | | |
| **Where Used: S1F4, S6F1** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **SVNAME** | **Status Variable Name** | **40** | **20** |
|  | | | |
| **Where Used: S1F12** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **TCSTID** | **Target (Destination)Cassette ID** | **20** | **20** |
|  | | | |
| **Where Used: S2F105** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **TEXT** | **TEXT** | **120** | **20** |
| A single line of characters. | | | |
| **Where Used: S10F1, S10F5** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **TIACK** | **Time acknowledgement code** | **1** | **20** |
| **0**: Accepted,  **1**: Error not done. | | | |
| **Where Used: S2F32** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **TRAYID** | **Tray Identification or Tray Number** | **20** | **20** |
| Formal TRAYID | | | |
| **Where Used: S2F103, S6F11** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **TRID** | **Trace Data ID** | **2** | **20** |
| Identifier of a specific Trace Report. | | | |
| **Where Used: S2F23, S6F1** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **TRSMODE** | **Transfer Mode** | **1** | **20** |
| **1**: AUTO (AGV or STK),  **2**: Manual(MGV). | | | |
| **Where Used: S1F6, S6F11** | | | |

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| **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** | | | |

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| **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** | | | |

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| **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** | | | |

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| **Item Name** | **Description** | **Byte** | **Format** |
| **UNITST** | **Unit State** | **1** | **20** |
| **I**: IDLE,  **R**: RUN,  **D**: DOWN,  **M**: MAINT.  **P**: PAUSE | | | |
| **Where Used: S1F6, S6F11** | | | |

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| **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** | | | |
|  | | | |

# Operating Characteristics

## Control State

### 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.

#### 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.

#### 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 andS2F41 (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.

#### 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.

### Model

#### 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.

#### Diagram

**REMOTE**

**LOCAL**

**OFF-LINE**

**ON-LINE**

**5**

**6**

**Power On**

**1**

**2**

**3**

**4**

#### 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 equipment accepts the host request to go OFF-LINE (S1F15) | OFF-LINE | “Change to OFF-LINE event” 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. |

## Data Collection

### 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 he 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.

#### EQUIPMENT STATUS

Maintenance Complete

Maintenance Start

Alarm

Clear

Process

End

Clear

Alarm

Alarm

Clear

Process

Start

**IDLE**

**RUN**

**DOWN**

**MAINT**

#### 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.

#### 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 |

#### 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 tine 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 (**SVID**s).
5. In case of Inline equipment, discussed with factory engineer.

#### 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.

#### 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.

#### 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.

#### 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-volatiles memory.

## Remote Control

### Definitions

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

#### 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.

#### 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.

## Cassette Information Download

### 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.

#### 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.

## Alarm Management

### 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.

#### 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

#### 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’.

#### 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.

#### 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.

### Model

#### Diagram

**2**

**ALARM CLEAR**

**1**

**ALARM SET**

#### 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 |

## Process Program (Recipe) Management

### 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

#### 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.

## Clock

### 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.

## Error Message

### 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.

## Equipment Terminal Service

### 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**.

# MESSAGE DETAIL

## 

## 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.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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’ [MATERIALUSEDCNT]>

※ 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]>

## 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 ECVi means that ECIDi 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 |

**D****escription:**

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 |

**D****escription:**

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:**

**[R****CMD = 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’ [BARCODEDATA]>

3.<L[2]

1.<A[6] ‘RESULT‘>

2.<A[1] ‘1 Bytes’ [BARCODEDATARESULT]>

**[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]

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.

**S****tructure :**

<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’ [SORTTURNFLAG]>

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 |
| 2 | 123 | Remind Job Start Signal | H🡪E | Y |

**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’ [SSLOTNO]>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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]>

## 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.

## 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]>

**R****emark**:

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’ [SSLOTNO]>

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]>

**R****emark:**

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’ [MATERIALUSEDCNT]>

※ 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’ [BARCODEDATA]>

**[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]>

## 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.

**S****tructure :**

<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]>

## 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 SxFyyy or SxxFy”

2.<A[6] ‘6 Bytes’ [EDID]> “Expected Data Identification”

## 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]>

# 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.

## Initialize Scenario

### Online Scenario (Offline -> Online by Unit):

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Operator actuates Online switch when Unit offline state is active | | | |
|  | | **🡨 S1F13** | Establish Comm,unication 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 | **S6F12🡪** |  | |
|  | | **🡨 S2F17** | Date and Time Request |
| Date and Time Data | **S2F18🡪** |  | |
|  | | **🡨 S1F5** | Formatted Status Request(FSR) |
| Formatted Status Data | **S1F6🡪** |  |  |
|  | | **🡨 S6F11**  **(114)** | Equipment Status Change |
| Host reply ACK | **S6F12🡪** |  | |
| If the Unit manages the material | | | |
|  | | **🡨 S6F11**  **(108)** | Material State Change |
| Host reply ACK | **S1F12🡪** |  | |

### 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 | | | |

### 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🡪** |  | |
| If the Unit manages the material | | | |
|  | | **🡨 S6F11**  **(108)** | Report Material State Change |
| Host reply ACK | **S1F12🡪** |  | |

### 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**  **🡨 S1F16** | [IF] Equipment is OFF-LINE  [THEN] Equipment denies requests  [ELSE] Equipment is ON-LINE |
|  | | **🡨 S6F11**  **(111)** | Control State Change (OFF-LINE) (Online -> Offline) |
| Host reply ACK | **S1F12🡪** |  | |

## Data Collection

[Event Data Collection]

### Equipment reports an event:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
|  | | 🡨 S6F11 | Equipment sends Event Report |
| Acknowledge | **S6F12 🡪** |  | |

[Process Data Collection]

### 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]

### 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]

### Host requests the value of Status Variables (SV):

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Selected Equipment Status Request | S1F3 🡪 |  | |
|  | | 🡨 S1F4 | Selected Equipment Status Data |

[Status Data Collection]

### Host requests the formatted status:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Formatted Status Request | S1F5🡪 |  | |
|  | | 🡨 S1F6 | Formatted Status Data |

[Equipment Constants Data Collection]

### Host requests the new value of Equipment Constants Variables (ECV):

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Equipment Constants Request | S2F13 🡪 |  | |
|  | | 🡨 S2F14 | Equipment Constants Data |

### 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]

### 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]** | |

### Equipment Constants Change by Operator:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
|  | | 🡨 S6F11 | Equipment Constant Change(CEID=109) |
| Acknowledge | **S6F12 🡪** |  | |

## Remote Control

### 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 🡪** |  | |

## Cassette Information Download

### Cassette Information Download:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Cassette Information Download | S2F103 🡪 |  | |
|  | | 🡨 S2F104 | Acknowledge |

## Alarm Management

### Enable/Disable Alarms:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Enable/disable Alarm | S5F3 🡪 |  | |
|  | | 🡨 S5F4 | Acknowledge |

### Send Alarm Report:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Alarm occurrence detected by the equipment. | | | |
|  | | 🡨 S5F1 | Send alarm report |
| Acknowledge | S5F2 🡪 |  | |

### Alarm List Request:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Host want to know equipment not cleared alarm list. | | | |
| Alarm List Request | S5F103 🡪 |  | |
|  | | 🡨 S5F104 | Alarm List Data |

### 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 |

## Process Program (Recipe) Management

### Host Attempts to Process Program Directory Request:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Current EPPD Request | S7F19 🡪 |  | |
|  | | 🡨 S7F20 | Current EPPD Data (List) |

### 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 |

## Clock

### Equipment Requests TIME:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
|  | | 🡨 S2F17 | Equipment requests Host time. |
| Host replies its internal time. | S2F18 🡪 | **[Equipment should change Time. If Time is zero-length item, equipment should not change time.]** | |

### Host Instructs Equipment to Set Time:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Host instructs equipment to set its time. | S2F31 🡪 |  | |
|  | | 🡨 S2F32 | Equipment sets its internal time reference to the value of TIME received from the host and acknowledges completion. |

## Error Message

### Message or Communication Fault:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Host sends a message | SxFy🡪 |  | |
|  | | 🡨 S9Fz | Equipment detects faults within the message from the host. |

## Equipment Terminal Service

### Operator sends information to the host:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
|  | | 🡨 S10F1 | Operator sends textual information via equipment terminal x. |
| Host acknowledges receipt of operator initiated message | S10F2 🡪 |  | |

### Host sends a multi-Block display message:

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | | **Equipment** | |
| Send Information | S10F5🡪 |  | |
|  | | 🡨 S10F6 | Accepted or denied. |

# OPERATION SCENARIOS

## Normal Sequence

### ON-LINE REMOTE 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 |
|  | | 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(1st) Glass Flow** | | | |
|  | | 🡨 S6F11 | **Glass Out By Indexer (CEID=321)**  **First(1st) 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(1st) glass** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Glass Process Start (CEID=335)**  **First(1st) 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)**  **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)**  **(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(nth) 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 unit, the equipment sends the Component In Event | |
| 🡨 S6F11 | **Glass In By Unit (CEID=324)**  **Last(nth) glass** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Glass Process Start (CEID=335)**  **Last(nth) 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(nth) 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(nth) glass** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Glass Process End (CEID=337)**  **Last(nth) 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(nth) glass** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | Whenever a glass processing is end, the equipment sends the glass data. | |
| 🡨 S6F3 | **Last(nth)** glass data(CEID 500) |
| Acknowledge | **S6F4🡪** |  | |
|  | | 🡨 S6F3 | Lot data Summary(CEID=501) |
| Acknowledge | **S6F4🡪** |  | |
|  | | 🡨 S6F11 | **Glass In By Indexer (CEID=322)**  **Last(nth) glass** |
| 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 🡪** |  | |

### 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(1st) 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(1st) glass** |
| Acknowledge | | **S6F12 🡪** |  | |
|  | | | 🡨 S6F11 | **Glass Process Start (CEID=335)**  **First(1st) 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)**  **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)**  **(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(nth) 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 unit, the equipment sends the Component In Event | |
| 🡨 S6F11 | **Glass In By Unit (CEID=324)**  **Last(nth) glass** |
| Acknowledge | | **S6F12 🡪** |  | |
|  | | | 🡨 S6F11 | **Glass Process Start (CEID=335)**  **Last(nth) 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(nth) 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(nth) glass** |
| Acknowledge | | **S6F12 🡪** |  | |
|  | | | 🡨 S6F11 | **Glass Process End (CEID=337)**  **Last(nth) 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(nth) glass** |
| Acknowledge | | **S6F12 🡪** |  | |
|  | | | Whenever a glass processing is end, the equipment sends the glass data. | |
| 🡨 S6F3 | **Last(nth)** glass data(CEID 500) |
| Acknowledge | | **S6F4🡪** |  | |
|  | | | 🡨 S6F3 | Lot data Summary(CEID=501) |
| Acknowledge | **S6F4🡪** | |  | |
|  | | | 🡨 S6F11 | **Glass In By Indexer (CEID=322)**  **Last(nth) glass** |
| 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 🡪** |  | |

### 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)** | | |
| Acknowledge | **S6F12 🡪** |  | | | |

### Mask Cleaner Scenario

#### Port Type : PL

| **Contents** | **Host** | **Equipment** | **Contents** |
| --- | --- | --- | --- |
|  | | The port is empty | |
| 🡨 S6F11 | **Mask Load Request (CEID=220)** |
| Acknowledge | **S6F12** 🡪 |  | |
|  | | 🡨 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 🡪** |  | |
|  | | The port is empty | |
| 🡨 S6F11 | **Mask Unload Complete(CEID=224)** |
| Acknowledge | **S6F12 🡪** |  | |

#### 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 🡪** |  | |

#### 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 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)** |
| Acknowledge | **S6F12 🡪** |  | |
|  | |  | |
|  | | 🡨 S6F11 | **Mask Out By Indexer (CEID=341)**  **Last(nth) Mask** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | Whenever a glass is moved into a unit from the previous unit, the equipment sends the Component In Event | |
| 🡨 S6F11 | **Mask In By Unit (CEID=344)**  **Last(nth) Mask** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Glass Process Start (CEID=335)**  **Last(nth) 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)**  **Last(nth) 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)**  **Last(nth) Mask** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Glass Process End (CEID=337)**  **Last(nth) 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=343)**  **Last(nth) Mask** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | Whenever a glass processing is end, the equipment sends the glass data. | |
| 🡨 S6F3 | **Last(nth)** Mask data(CEID=502) |
| Acknowledge | **S6F4🡪** |  | |
|  | | 🡨 S6F11 | **Mask In By Indexer (CEID=342)**  **Last(nth) Mask** |
| Acknowledge | **S6F12 🡪** |  | |

### 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.** | | | | | | |
|  | | | 🡨 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🡪 |  | |  | |

### 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 | | |
| 🡨 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🡪 |  | | |

### 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🡪 |  | |

### 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 🡪** |  | | | |
| 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(1st) glass data(CEID 500) | | |
| Acknowledge | **S6F4🡪** |  |  | | |
|  | | When the last glass processing is started, report the event | | | |
| 🡨 S6F11 | Last(nth) 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 | | | |
| 🡨 S6F3 | Last(nth) 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. | | | | | |

### Mask Offset Information Upload Scenario

|  |  |  |  |
| --- | --- | --- | --- |
| **Contents** | **Host** | **Equipment** | **Contents** |
|  | | Report after inspection in PPA, Light On | |
|  | | 🡨 S6F119 | Mask Offset Information Upload |
| Acknowledge | S6F120🡪 |  | |

### 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 |

### 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 |

### 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🡪 |  | |

### 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 |

### 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 |

### 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🡪 |  | |

### TrayPort Normal Scenario

#### Tray Normal Scenario – LoadPort

| **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 🡪** |  | |
|  | | 🡨 S6F11 | **Cell Information Request(CEID:370)** |
| 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 🡪** |  | |

#### 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 |
|  | | 🡨 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 🡪** |  | |

### 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 🡪** |  | |
|  | | 🡨 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 🡪** |  | |

### 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 🡪** |  | |
| **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 🡪** |  | |

## Abnormal Sequence

### 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.**

### Conversation Timeout (Cassette Information Download) :

#### 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. | |
|  | | 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🡪 |  | |
|  |  |  | |

#### 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🡪 |  | |

#### 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🡪 |  | |
|  | | 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🡪 |  | |

### Validation NG (S2F103)

#### 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🡪 |  | |

#### Operator Changes ON-LINE MODE to OFF-LINE

| **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 | |
|  | | The operator changes to OFF-LINE | |
| 🡨 S6F11 | OFF-LINE |
| Acknowledge | S6F12🡪 |  | |

#### 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🡪 |  | |

### Lot Cancel by Operator

#### 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 |
| Acknowledge | S6F12🡪 |  | |

#### 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 |
|  | | *After modifying(or not) for the cassette information, the operator should confirm it.* | |
|  | | *The operator pushes the Start Button for processing the cassette.* | |
|  | | **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🡪 |  | |

### Process Abort

#### 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🡪 |  | |

### Empty Cassette

#### 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. | | |

#### 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. | |

#### 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🡪 | |  | |

### Conversation Timeout (Start Command: ON-LINE REMOTE Mode Only)

#### 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🡪 |  | | |
|  | | 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🡪 |  | | |

#### 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🡪 |  | |
|  | | 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🡪 |  | |

#### 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 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🡪 |  | |
| : | | | |

### Validation NG (S2F41: ON-LINE REMOTE Mode Only)

#### 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) |
|  | | 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🡪 |  | |

#### 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🡪 |  | |

#### 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 | **S****6F12**🡪 | |  | |
| 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🡪 | |  | |

## Abnormal Sequence Mask Cleaner

### 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🡪 |  | |
|  | | 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.**

### Conversation Timeout (Mask Cassette Information Download) - LoadPort

#### 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) |
| Acknowledge | S6F12🡪 |  | |
|  | | 🡨 S6F11 | Process Start (CEID: 301) |
| Acknowledge | S6F12🡪 |  | |
|  | | 🡨 S6F11 | Glass Out By Indexer |
| Acknowledge | S6F12🡪 |  | |

#### 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🡪 |  | |

#### 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) |
| Acknowledge | S6F12🡪 |  | |
|  | | CST is unloaded on the port by AGV, Crane. | |
| 🡨 S6F11 | CST Unload Complete (CEID: 224) |
| Acknowledge | S6F12🡪 |  | |

### Validation NG (S2F109) - LoadPort

#### 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🡪 |  | |

#### Operator Changes ON-LINE MODE to OFF-LINE

| **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 | |
|  | | The operator changes to OFF-LINE | |
| 🡨 S6F11 | OFF-LINE (CEID: 111) |
| Acknowledge | S6F12🡪 |  | |

#### 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. | |
|  | | 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🡪 |  | |
|  | | CST is unloaded on the port by AGV, Crane. | |
| 🡨 S6F11 | CST Unload Complete (CEID: 224) |
| Acknowledge | S6F12🡪 |  | |

### Lot Cancel by Operator - LoadPort

#### 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) |
| Acknowledge | S6F12🡪 |  | |

#### 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 |
|  | | *After modifying(or not) for the cassette information, the operator should confirm it.* | |
|  | | *The operator pushes the Start Button for processing the cassette.* | |
|  | | **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🡪 |  | |

### Process Abort

#### 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🡪 |  | |

### Empty Cassette - UnloadPort

#### 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. | | |

#### 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. | | |

#### 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🡪 | |  | |

### Conversation Timeout (Start Command: ON-LINE REMOTE Mode Only) -LoadPort

#### 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 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🡪 |  | | |

#### 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🡪 |  | |
|  | | 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🡪 |  | |

#### 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🡪 |  | |
|  | | 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🡪 |  | |
| : | | | |

### Validation NG (S2F41: ON-LINE REMOTE Mode Only) - LoadPort

#### 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 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🡪 |  | |

#### 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  (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🡪 |  | |

#### 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 |
| Acknowledge | S6F12🡪 | |  | |

### Conversation Timeout (S2F105) - UnloadPort

#### 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🡪 |  | |

#### 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🡪 |  | |

#### 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🡪 |  | |
|  | | CST is unloaded on the port by AGV, Crane. | |
| 🡨 S6F11 | CST Unload Complete (CEID: 224) |
| Acknowledge | S6F12🡪 |  | |

### Validation NG (S2F105) - UnloadPort

#### Operator edits the Cassette Information Data.

| **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 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🡪 |  | |

#### 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🡪 |  | |

#### 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🡪 |  | |
|  | | CST is unloaded on the port by AGV, Crane. | |
| 🡨 S6F11 | CST Unload Complete (CEID: 224) |
| Acknowledge | S6F12🡪 |  | |

## Abnormal Sequence TrayPort

### 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, | |
|  | |
| 🡨 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 🡪** |  | |

### Conversation TimeOut (Tray Information Download)

#### 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 🡪** |  | |
| 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 | **Tray Move Out (CEID:360)** |
| Acknowledge | **S6F12 🡪** |  | |  |
|  | | 🡨 S6F11 | **Tray Move In (CEID:361)** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Tray Process Start** |
| Acknowledge | **S6F12 🡪** |  | |

#### 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 🡪** |  | | |  |

#### 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 🡪** |  | |
| 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 🡪** |  | |

### Validation NG (Tray Information Download)

#### 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. | |
|  | | 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 Process Start |
| Acknowledge | S6F12🡪 |  |  |
|  | | | |

#### 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 | |
|  | | The operator changes to OFF-LINE | |
|  | | 🡨 S6F11 | OFF-LINE |
| Acknowledge | S6F12🡪 |  | |
|  | | | |

#### 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 | 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🡪 |  | |
|  | | CST is unloaded on the port by AGV, Crane. | |
|  | | 🡨 S6F11 | Tray Unload Complete |
| Acknowledge | S6F12🡪 |  | |

### Lot Cancel by Operator

#### 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) |
| 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🡪 |  |  |

#### 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 |
|  |  | *After modifying(or not) for the cassette information, the operator should confirm it.* | |  |
|  |  | *The operator pushes the Start Button for processing the cassette.* | |
|  |  | **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 🡪** |  |  |

### Process Abort

#### 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🡪 |  | |
|  | | CST is unloaded on the port by AGV, MGV or Crane. | |
| 🡨 S6F11 | Tray Unload Complete |
| Acknowledge | S6F12🡪 |  | |

### Empty Tray

#### 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 |

#### 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 🡪** |  | |

#### 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🡪 | |  | |

### Conversation Timeout (Start Command: ON-LINE REMOTE Mode Only)

#### 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 🡪** |  | |
|  | | 🡨 S6F11 | **Tray Move In (CEID:361)** |
| Acknowledge | **S6F12 🡪** |  | |
|  | | 🡨 S6F11 | **Tray Process Start** |
| Acknowledge | S6F12🡪 |  | |

#### 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 🡪** |  | |
|  | | | | |

#### Operator Select 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 | |
|  | | 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 🡪** |  | | |
|  | | | | |

### Validation NG (S2F41: ON-LINE REMOTE Mode Only)

#### 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 |
| **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 🡪** |  | |

#### 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 |
| Acknowledge | **S6F12 🡪** |  |  |

#### 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🡪 |  | |
|  | | CST is unloaded on the port by AGV, Crane. | |
|  | | 🡨 S6F11 | Tray Unload Complete |
| Acknowledge | S6F12🡪 |  | |

### Conversation Timeout (Cell Information Download)

#### 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 🡪** | 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 🡪** |  |  |

#### 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 🡪 |  | |
|  | | 🡨 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 🡪** |  |  |

### Validation NG(Cell Information Download)

#### 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 |
| **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 🡪** |  |  |

#### 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 🡪 |  | |
|  | | 🡨 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 | |
|  |  | The operator changes to OFF-LINE | |
|  |  | 🡨 S6F11 | OFF-LINE |
| Acknowledge | S6F12🡪 |  |  |

### Conversation Timeout (Empty Permission)

#### 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, 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 🡪** |  | |

#### 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 🡪** |  | |

#### 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 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 🡪** |  | |

### Validation NG (Empty Permission)

#### 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)** |
| Acknowledge | **S6F12 🡪** |  | |

#### 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 🡪** |  | |

#### 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 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 🡪** |  | |

## Abnormal Sequence Un-Packer

### 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 🡪** |  | | |

### Conversation Timeout (Remote Command (Bar Code Data (crate-id) result))

#### Operator edits Bar Code Data (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 🡪** |  | | |
|  |  | 🡨 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 🡪** |  | | |

#### 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🡪 |  | | |

#### 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 🡪** |  | | |

### Validation NG (S2F103)

#### 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 🡪** |  | | |

#### 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🡪 |  | | |

#### 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 🡪** |  |  | |

### Lot Cancel by Operator

#### 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 🡪** |  |  | |

#### 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 🡪** |  |  | |

### Process Abort

#### 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🡪 |  | |
|  |  | 🡨 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 🡪** |  |  |

### Empty Cassette - UnloadPort

#### 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. | | |

#### 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. | | |

#### 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🡪 | |  | |

# 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.

## 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.

RIGHT & TOP

DISPLAY

Control State

OFF-LINE

2003/12/25 10:02 - The control state is changed OFF-LINE by HOST.

Host Message

BOTTOM

Func. A

Func. B

Ref. HOST

RIGHT & BOTTOM

▼

### 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**.

### 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

### 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.

#### 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 |  |

#### Host Message Display

We hope the **new host message** which should include date and time is displayed.

Display about Sub Screens or Menus

1. When the operator clicks to **Control State button**

**Control State Change**

**OFF-LINE**

**LOCAL**

**REMOTE**

**X**

1. When the operator clicks to **Host Message button**

**X**

**Host Terminal Message**

**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**

1. When the operator clicks to **Ref. HOST button**

**LOG VIEW**

**X**

**Ref. HOST Selection**

**CONFIG**

1. When the operator clicks to **CONFIG button**

**X**

**HSMS Parameter Setting**

**Connection Mode**

**T3 Timeout**

**T5 Timeout**

**Local IP Address**

**T6 Timeout**

**Remote IP Address**

**T7 Timeout**

**Local IP Port**

**T8 Timeout**

**Remote IP Port**

**Device ID**

**Link Test Timer**

**DEFAULT**

**SET**

# 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.

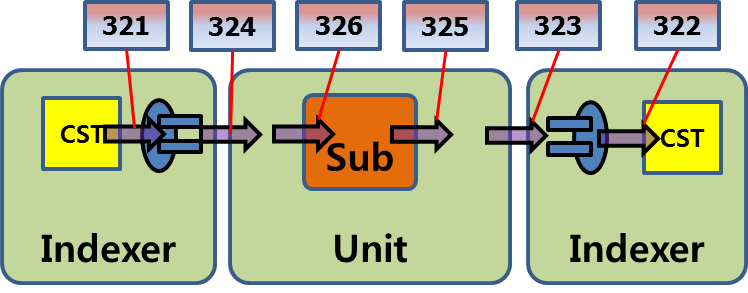
Appendix: Equipment Constant List

| **ECID** | **ECNAME** | **Units** | **Format** | **Min** | **Max** | **Default** | **Description** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | CONTROL STATE KEEPING TIME | Sec | A | 0 | 600 | 0 | 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.  2) If HSMS connection is not re-connected within CONTROL STATE KEEPING TIME, equipment should change control state to OFF-LINE.  3) If CONTROL STATE KEEPING TIME is 0(zero), equipment should change control state to OFF-LINE immediately when HSMS connection is disconnected.  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). |
| 3 | GEM INITIAL CONTROL STATE |  | A | 0 | 2 | O | EQUIPMENT DEFAULT CONTROL STATE. Specifies the Equipment’s default control state after a power on.  If GEM INITIAL CONTROL STATE is ON-LINE LOCAL or REMOTE, equipment should execute Operator Initiates Scenario.  O: OFF-LINE  L: ON-LINE LOCAL  R: ON-LINE REMOTE |
| 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 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 | **Transfer Mode Value**  1: AUTO (AGV or STK),  2: Manual(MGV)  \* 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… |
| 41~60 | PxxTYPE  (P01TYPE, P02TYPE, P03TYPE, P04TYPE …) |  | A | None | None | PB | **Port Type Value**  PB: Both Port(Load/Unload),  PL: Load Port,  PU: Unload Port,  BB: Both Buffer(Load/Unload),  BL: Load Buffer,  BU: Unload Buffer  \* Setting Port Type  \* Port Type, ECID count and Port count and are Same.  Ex) IF number of Port: 4 Port  P01TYPE, P02TYPE, P03TYPE, P04TYPE… |
| 61~80 | PxxUSETYPE  (P01USETYPE, P02USETYPE,  P03USETYPE, P04USETYPE…) |  | A | None | None | OA | **Port Use Type Value**  OA: OK All (or Source),  DM: DuMmy,  GG: Good,  NG: Not Good,  RW: Rework,  RP: RePair,  SC: Scrap.  The follows are only used in the Cell Inline Equipment – PI/Rubbing/Assembly  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.  *REMARK*:  A USETYPE DATA append possible at the 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.

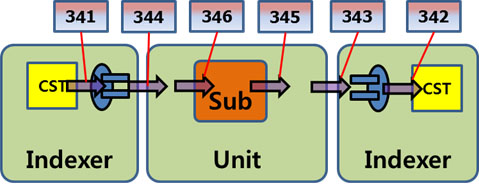
Appendix: Glass Component In/Out sequence diagram



**## 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 |

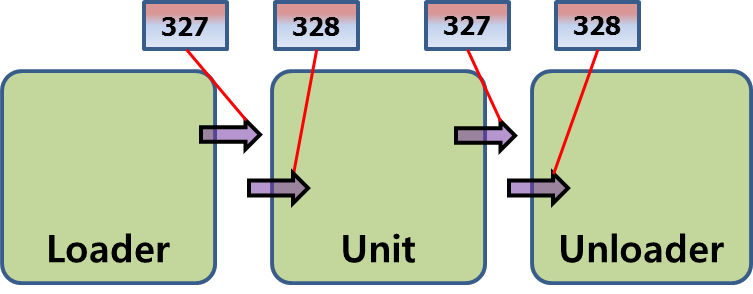
Appendix: Mask Component In/Out sequence diagram



**## 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



**329**

**330**

**330**

**329**

**## 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 -