

**Taiwan Stock Exchange Corporation**

**FIX/FAST Market Information  
Transmission System  
Connection Handbook**

**Prepared by Taiwan Stock Exchange Corporation  
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### Version Update Log

Code	Description	Version	Date
1	Initial version	1.0	2012/3/14
2	Addition of Rules for Data Users in Changing Password. Addition of RS Message transmission format for Data Users	1.1	2012/09/06
3	Addition to a Schedule of Newly Compiled Index Codes	1.2	2012/11/01
4	Following stock codification rules change, amending convertible bonds, exchangeable corporate bonds, and exchangeable financial bonds codes.	1.3	2013/01/16
5	Addition to “TWSE RA Taiwan Employment Creation 99 Total Return Index” and “TWSE RA Taiwan Corporate Operation 101 Total Return Index” in appendix 5	1.4	2013/04/15

# Table of Contents

One.	Introduction.....	5
Two.	Basic Architecture .....	6
	I. Connection Architecture.....	6
	II. Application Architecture .....	7
Three.	Information Transmission Protocol .....	9
	I. Network Transmission Protocol .....	9
	II. Data Streaming Compression Technology Protocol —FAST(FIX Adapted for STraming) .....	9
	III. Socket Communication Processing Layer .....	10
	IV. Protocol of data format and body —FIX (Financial Information eXchange) .....	11
Four.	Real-time DAP-RT information transmission.....	14
	I. Logon.....	14
	II. Message Transmission.....	16
	III. Logout.....	17
Five.	DAP-RB Market Information Resend .....	19
	Information Replay Function .....	19
	I. Logon.....	19
	II. Information Replay .....	19
	III. Logout.....	20
	Search Resend Function.....	21
	I. Logon.....	21
	II. Search resend .....	21
	III. Logout.....	23
Six.	Description of Message Format and Template.....	24
	I. Standard Header and Trailer .....	24
	1. Standard Header .....	24
	2. Standard Trailer .....	25
	II. Management Information .....	27

1.	Logon message.....	27
2.	Heartbeat message.....	29
3.	Session reject message (Reject–Session Level) .....	29
4.	Logout Message .....	31
5.	Search Resend Message .....	32
5.1.	Search Research Request Message .....	32
5.2.	Search Resend Request Reject .....	33
III.	Application message: .....	34
1.	Basic Data of Individual Common Stocks at TWSE (d1) .....	35
2.	Full-name information on call (put) warrants at TWSE (d2).....	40
3.	Status of Securities at TWSE (f1) .....	43
4.	Real-time market information of common stocks at TWSE (X1/X2) .....	47
5.	Information on Completed Fixed Price Securities Trade at TWSE (X3) .....	57
6.	Real-time market information on Odd Lot Trade of Stocks at TWSE (X4).....	60
7.	Statistics of Securities Trade at TWSE at Close of Market (WS1/WS2).....	65
8.	Statistics of general trade of individual common stocks at TWSE (WT1) .....	69
9.	Statistics of Fixed Price/after closing trade at TWSE (WT2/WT3/WT4) .....	73
10.	Statistics of general Taiex index trade at TWSE (WI1/WI2/WI3) .....	76
11.	Statistics of general consignment trade at TWSE (WO1).....	79
12.	Statistics of fixed-price consignment trade at TWSE (WO2).....	84
13.	TWSE announcements (B1/B2/B3).....	88
Seven.	Appendixes .....	91
I.	Alternate site backup plan .....	91
II.	Industry Category Code Table, Stock Codification Rules ...	93
III.	Stock Category Code Table .....	98
IV.	Index Code Table .....	99
V.	Return Index Code Table.....	102
VI.	Newly Compiled Index Code Table.....	104
VII.	TWSE FIX/FAST message transmission table.....	1055

## One.

### Introduction

In light of the worldwide development of security trade programs and the trend of using high-speed quotes for online ordering, Taiwan Stock Exchange Corporation (hereinafter, “TWSE”) seeks to install the “FIX/FAST Market Information Transmission System” applicable to the transmission of real-time market information and related statistics to upgrade the efficiency and quality of data transmission. The FIX transmission protocol is adopted for data transmission, data format, and mode of transmission in the FIX data format and with the compression technology of FAST in order to link to global securities trade.

This Connection Handbook is prepared with reference to the FIX 4.4 (or update version) standard and the FAST 1.1 subject to the revision and announcement of TWSE where necessary.

#### Reference links:

I FIX transmission protocol: <http://www.fixprotocol.org/specifications/>

- The FIX Protocol Standard Version 4.4
- The FIX Protocol Standard Version 5.0 Service Pack 2
- User can register at the website for download the complete document files of FIX format in various versions.

<http://www.fixprotocol.org/FIXimate3.0/?language=en&version=FIX.4.4>

<http://fixwiki.fixprotocol.org/fixwiki/FIXwiki>

<http://btobits.com/fixopaedia/index.html>

II FAST transmission protocol standard:

<http://www.fixprotocol.org/fastspec>

FAST Specification Version 1.1

Program codes of compression and decompression reference:

<http://www.openfast.org/> (Java)

[www.quickfast.org](http://www.quickfast.org) (C++)

[www.sourceforge.net/projects/openfastdotnet/](http://www.sourceforge.net/projects/openfastdotnet/) (C#)

Source: [http://en.wikipedia.org/wiki/FAST\\_protocol](http://en.wikipedia.org/wiki/FAST_protocol)

III Users may download the FIX/FAST Information Transmission System Connection Handbook from the official website of TWSE at <http://www.twse.com.tw>. Please visit the home page of the website, and click to select “Products and Services” → “Service for securities dealers” → “Computer Department/Operation Department”

## **Two. Basic Architecture**

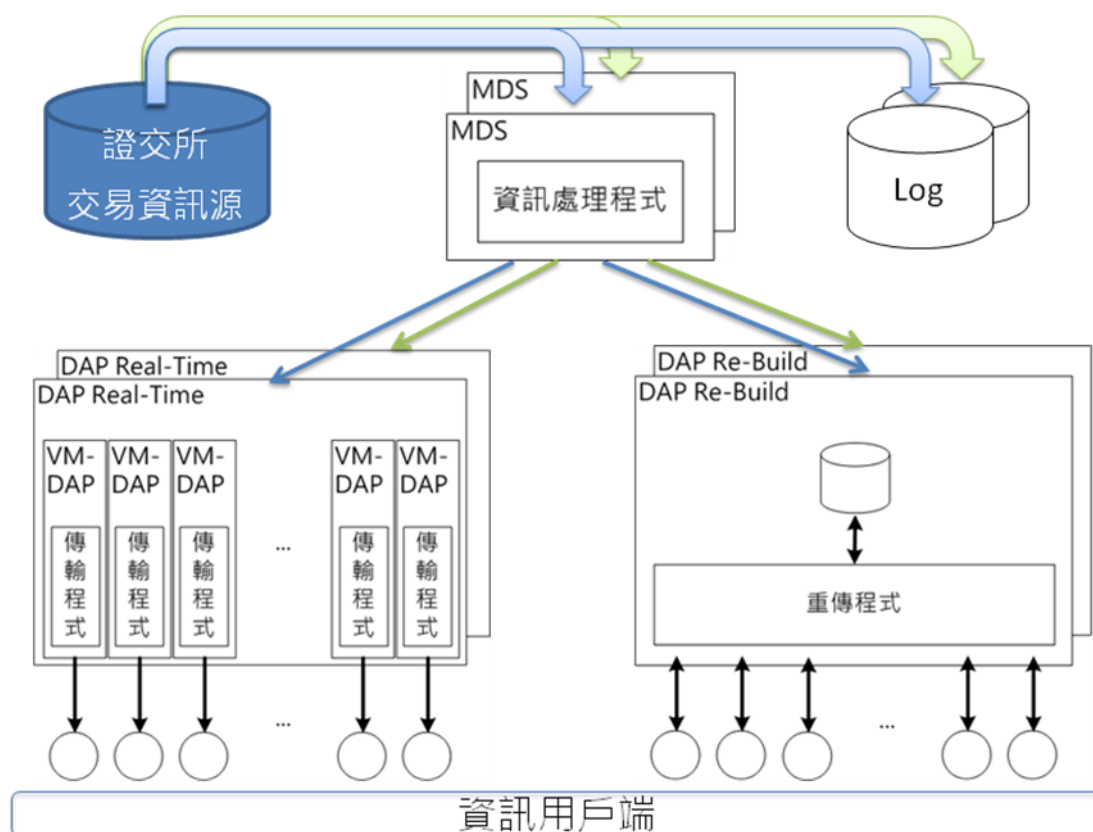
### **I. Connection Architecture**

TWSE adopted the NGSDH private line of Chung Hwa Telecom as its security trade information network architecture under TCP/IP. The connection between the user end (securities dealers/information service suppliers) and TWSE is defaulted by point-to-point IP featuring high efficiency and security. TCP/IP will be applied to users applying for connection with fixed networks.

The information user end is required to apply for two new actual lines. The transmission for all lines is performed under TCP/IP Protocol.

Users may make inquiry of the application and change for the TCP/IP securities trade information network, FIX/FAST information lines and the application form at the official website of TWSE. Please visit the official website of TWSE at <http://www.twse.com.tw> and enter the home page, then click to select “Products and Services” → “Service for securities dealers” → “Computer Department/Operation Department” for inquiry and notes to the documents.

## II. Application Architecture



- (I) MDS(Market Data Server): This is the sever end at TWSE and is responsible for formatting market data into FIX, compressing the data streaming of FAST, and transmitting to all DAP via the intranet in high-speed.
- (II) DAP (Data Access Point): This is the server end at TWSE and is responsible for sending and receiving MDS data to the user end, and the connection with the data user end.
  1. DAP Real-Time: Transmission of market data to the user end in real-time.  
This function module is executed at an open-system environment and performs the function of receiving market data at MDS end after compressing by FAST and sent via the TCP/IP to the user end in real-time.

2. DAP Re-Build: Processing the request for rebuilding information at the user end.

DAP-RB is executed in an open-system environment and performs the function of receiving information from MDS end and the storage of information for re-playing the data at the information user end. The re-build process is classified as search information resend and replay and is executed on demand at the information user end. TWSE will re-play the market data in FAST format.

3. The equity of data transmission

The DAP-Real Time module at the TWSE end adopts the TCP/IP protocol and data line for connection with the customer end. Each information user end is connected to a single DAP-Real Time server. This server adopts the same format for system resources, network resources, and application programs to ensure equal performance for DAP-RT processing at each information user end.



### **Three. Information Transmission Protocol**

#### **I. Network Transmission Protocol**

The “FIX/FAST information transmission system adopts the FIX application format and the FAST data streaming compression technology protocol. The connection between TWSE end and the user end is made under the TCP/IP.

#### **II. Data Streaming Compression Technology Protocol —FAST(FIX Adapted for STreaming)**

FAST is a kind of information-oriented data streaming binary compression coding method featuring high compression ratio and processing efficiency. This part of the handbook gives a brief outline on the basic concept of FAST data streaming compression technology protocol. For detail and examples, refer to <http://www.fixprotocol.org/fastspec>

FAST reduces the volume of data streaming from two layers. The “Field Operators” operation reduces the volume of data streaming by using Implicit tag and Operator. The “Transfer Encoding” operation compresses the data for transmission by the optimization of binary coding and Presence Map (PMAP) and Stop Bit.

##### **(I) Field Operators**

The operation with “Field Operators” is regulated by Implicit tag and transforms the data into the FIX information format information template in fixed priority to replace the data format Tag for transmission. In data transmission, only the field value is sent. The receiver of data converts the data back to information through the information template. The format of information template can be determined by TWSE. Please refer to the part of “Notes to data format and template”.

The Operator is explained below:

The Operator	Description
Constant	The constant
Default	Default value
Copy	Identical information
Increment	Incremental change in information
Delta	Information varied
Tail	Information varied at the tail part

(II) Transfer Encoding

Transfer Encoding is operated by the techniques of Presence Map (PMAP) and Stop Bit to yield the desired result of optimizing binary coding.

In Presence Map (PMAP) a byte is added before each transmission of data representing the existence of information in the field in the data transmission. Each byte represents one field. Bit value of 1 means there is such a field and Bit value of 0 means there is no such field. The field not in existence can be omitted in the coding to reduce the transmission volume of data.

In the process of binary coding of the data body in the field, Stop Bit is the symbol for determining the segmentation of the data field, and is located at the highest bit of a byte. Stop Bit of 0 means the next byte will be data of the same field. Stop Bit of 1 means the next byte will be data of another field.

**III. Socket Communication Processing Layer**

The socket communication processing layer falls between AP and TCP/IP, and is responsible for adding the Header Code and the Trailer to FAST data from AP for conversion to Socket Communication Layer message (commonly known as Socket message or SLM, Sokcet Level Message). The SLM will be

delivered to the receiver via the socket of TCP/IP. The Socket layer of message receiver must remove the Header Code and the Trailer of the SLM being received, and send the FAST data to AP.

The fields are described in the table below:

Field Name	Length	Description
Header Code	2	Hex value OxFEFE
AP-Message-Length	2	Integer, the high byte on the left side representing the length of FAST message
FAST Message Body		The original FAST message content
Trailer	2	Hex value OxEFEF

#### IV. Protocol of data format and body —FIX (Financial Information exchange)

The length of the FIX data format specified here is not fixed. All data will be grouped for transmission in this format so that both the sender and the receiver can have the correct resolution of the format.

##### (I) Fixed data field

FIX data format includes a Standard Header, Body, and Standard Trailer. Each count of information is formed by a series of <tag>=<value> and is separated by SOH.

The first three fields of the Header and the Trailer of FIX data format are fixed while other fields are flexible, which are shown in the table below:

Message	Field Code (Tag No.)	Field Name	Sequential Order
Standard Header	<b>8</b>	BeginString	<b>Fixed</b>
	<b>9</b>	BodyLength	<b>Fixed</b>

	<b>35</b>	MsgType	<b>Fixed</b>
		Other fields of Standard Header	Flexible
Body		Enter the Body fields as needed	Flexible
Standard Trailer	<b>10</b>	Checksum	<b>Fixed</b>

(II) SOH: (ASCII “SOH”, 0x01)

All fields for FIX information are separated by symbols under ASCII “SOH” (the digit is 0x01, and is expressed as <SOH> in this handbook). All information starts with “8=FIX.4.4<SOH>” and ends with “10=nnn<SOH>” while nnn is the result of calculation under CheckSum.

FAST data streaming compression technology is adopted here. When FIX information is grouped, fields (Tag) and ASCII “SOH” will not be sent in the transmission. The receiver end uses the Template to identify field definition and Stop Bit to identify the start and the end of the field. If the receiver end needs the FIX format for transmission to back-end system, it must add the FIX field (Tag) and the SOH.

(III) Data Sequence Numbers

TWSE connects the user end via TCP/IP. In this handbook, there is no guaranteed increment of the sequence number of the FIX Header. Therefore, it is not applicable to the checking of continued data transmission. Classification of coding will be explained elsewhere in this handbook with application message code for checking any missing message. For details, please refer to “Description of Data Format and Template”.

(IV) Field Priority

Each count of FIX information shall include necessary, unnecessary, and conditional fields (necessity is determined by the existence of the field and the value).

(V) User defined fields

TWSE uses the FIX4.4 defined fields as the standard. If the FIX4.4 defined fields cannot satisfy the basic requirement of the system, TWSE shall refer to FIX 5.0 (or update version) for defining the fields. All other data fields shall be defined with Tag greater than 10000.

## **Four.**

### **Real-time DAP-RT information transmission**

FIX/FAST real-time market information transmission system provides users with market information on stocks, options, and other instruments in real-time (application messages of instruments other than stocks and option).

Real-time market information feed is connected by three sessions, Port 10001, Port 10002, and Port 10003 through which information on stocks, warrants, and others (practical information other than stocks and warrants) can be transmitted.

Session connection includes three operations: Logon, Message Transmission, and Logout.

#### **I. Logon**

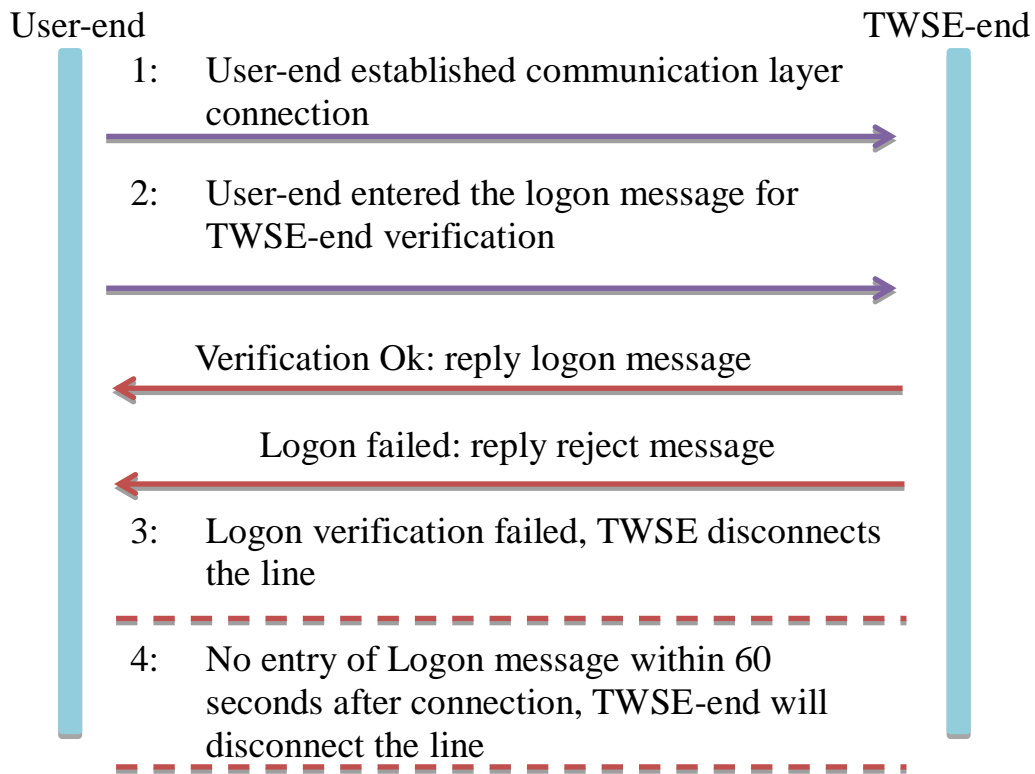
Establish FIX/FAST connection, including communication layer connection and logon verification.

- (I) Establish connection of the communication layer: if no logon message is sent within 60 seconds after the connection, the TWSE-end will automatically disconnect the line. If so, the user-end shall reconnect the line.
- (II) Logon Verification: After the line is connected, the user-end shall enter the logon message to TWSE for verification.
  - 1. Verification OK: both the user code and the password are correct, and the TWSE-end will reply to the logon message from the user-end. After receiving the successfully logon message from the TWSE-end, the user-end starts to receive real-time information.
  - 2. Logon failed: TWSE replies to the logon with Reject-Session Level message to the user-end and disconnects the line.

Logon summary and process flow chart:

- (I) The user-end established communication layer connection.
- (II) The user-end transmitted the logon message to TWSE for logon verification.
  - 1. Logon OK: TWSE replies with logon message.
  - 2. Logon failed: TWSE replies with Session Message (Reject-Session Level).

- (III) Login verification failed, TWSE disconnects the line.
- (IV) If the user-end fails to enter the logon message within 60 seconds after the connection, the TWSE-end will automatically disconnect the line.



If the user-end discovers an unusual connection even though the connection has succeeded, logon the TWSE-end once again. TWSE will disconnect the current connection and verify the new logon for establishing a new connection.

## II. Message Transmission

After successful logon, TWSE-end starts to send real-time market information.

If the message sent from the user-end is not in the format supported by the format stated in the handbook, TWSE will reply with reject session (Reject-Session Level) and count the repetitions of rejection accumulatively.

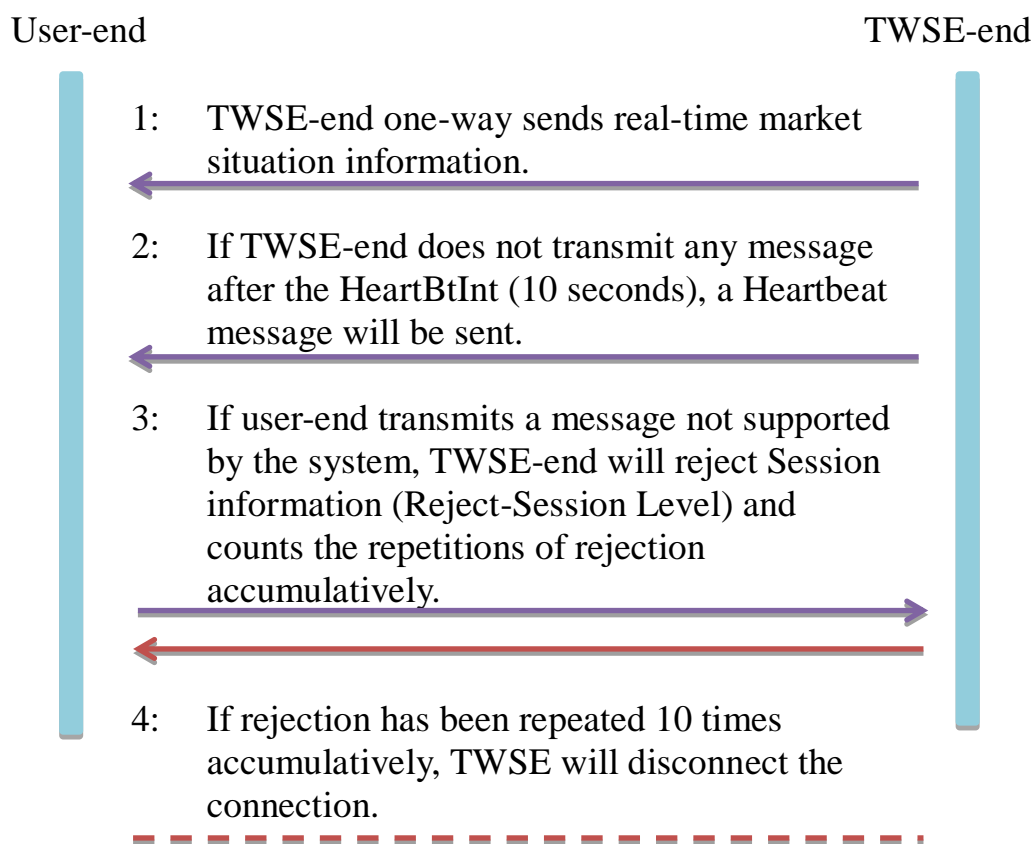
If rejection is repeated 10 times accumulatively, TWSE-end will automatically disconnect the line. Under this situation, the user-end shall connect the line again. The number of errors shall be counted again after successful logon of the user-end.

After the Logon process is completed, TWSE-end starts to send real-time market information in FIX/FAST format. For details of the message body, refer to “Message format and template”.

Summary and process follow chart of message transmission:



- (I) TWSE-end transmits one-way market information.
- (II) If the TWSE-end does not transmit any message after the HeartBtInt (10 seconds), a Heartbeat message will be sent.
- (III) If the user-end transmits a message not supported by the system, TWSE-end will reject Session information (Reject-Session Level) and counts the repetitions of rejection accumulatively.
- (IV) If rejection has been repeated 10 times accumulatively, TWSE will disconnect the connection.



If the user-end does not receive any message during the HeartBtInt + reasonable transmission time (20% HeartBtInt), the connection is confirmed failed and the line will be disconnected and reconnected again.

### III. Logout

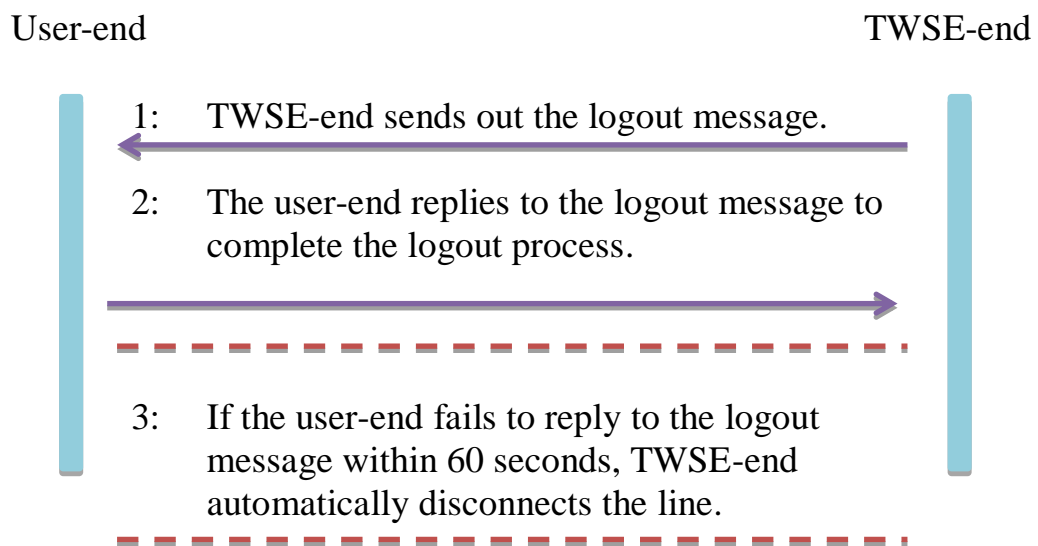
Under the normal mode of disconnection of information exchange, TWSE will automatically send the logout message to the

user-end with the reply from the user-end to TWSE for confirmation of logout.

After TWSE-end has sent the logout message to the user-end, the user end must reply to the logout message from TWSE to complete the logout. If the user-end fails to reply within 60 seconds, TWSE-end will automatically disconnect the line.

Summary and process flow chart of logout:

- (I) TWSE-end sends out the logout message.
- (II) The user-end replies to the logout message to complete the logout process.
- (III) If the user-end fails to reply to the logout message within 60 seconds, TWSE-end automatically disconnects the line.



## **Five.**

### **DAP-RB Market Information Resend**

FIX/FAST information resend responds to the request of users for resend of information. The resend of market information could be classified into Re-play and search resend and are described below:

#### **Information Replay Function**

The FIX/FAST market information replay is one of the resend functions for providing users the resend of all market information on stocks, warrants, and other instruments (application messages of instruments other than stocks and warrants).

Information could be replayed by three Session lines for connection; they are Port 15001, Port 15002, and Port 15003 for the transmission of market information on stocks, warrants, and other information (practical information other than stocks and warrants).

Session connection includes three operations: Logon, information replay, and logout.

#### **I. Logon**

The same as the logon process for real-time market information feed.

#### **II. Information Replay**

After the logon, TWSE-end starts to one-way send the practical information of the day for replay.

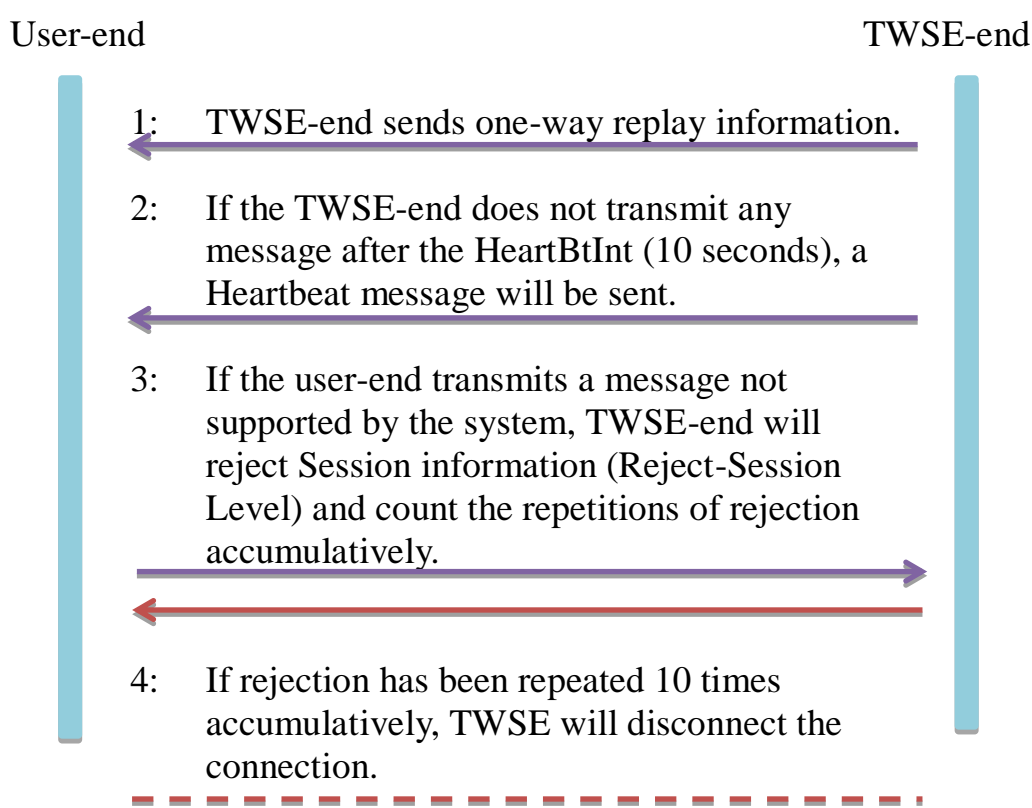
If the message sent from the user-end is not in the format supported by the format stated in the handbook, TWSE will reply with reject session (Reject-Session Level) and count the repetitions of rejection accumulatively.

If rejection is repeated 10 times accumulatively, TWSE-end will automatically disconnect the line. Under this situation, the user-end shall connect the line again. The number of errors shall be counted again after successful logon of the user-end.

After the Logon process is completed, TWSE-end starts to send the replay information in FIX/FAST format. For details of the message body, refer to “Message format and template”.

Summary and process follow chart of message transmission:

- (I) TWSE-end transmits one-way market information.
- (II) If the TWSE-end does not transmit any message after the HeartBtInt (10 seconds), a Heartbeat message will be sent.
- (III) If the user-end transmits a message not supported by the system, TWSE-end will reject Session information (Reject-Session Level) and count the repetitions of rejection accumulatively.
- (IV) If rejection has been repeated 10 times accumulatively, TWSE will disconnect the connection.



If the user-end does not receive any message during the HeartBtInt + reasonable transmission time (20% HeartBtInt), the connection is confirmed failed and the line will be disconnected and reconnected again.

### III. Logout

The same as the logout process of real-time information feed (Logout).

## **Search Resend Function**

The FIX/FAST market search resend is one of the resend functions for resending to users all market information on stocks, warrants, and other instruments (application messages of instruments other than stocks and warrants) on designated market information format and defined scope of search.

Search could be resent via three Session lines for connection; they are Port 18001, Port 18002, and Port 18003 for the transmission of market information on stocks, warrants, and other information.

Session connection includes three operations: Logon, information replay, and logout.

### **I. Logon**

The same as the logon process for real-time market information feed.

## **II. Search resend**

After the logon, TWSE-end starts to resend the request of market information search by the users.

If the message sent from the user-end is not in the format supported by the format stated in the handbook, TWSE will reply with reject session (Reject-Session Level) and count the repetitions of rejection accumulatively.

If rejection is repeated 10 times accumulatively, TWSE-end will automatically disconnect the line. Under this situation, the user-end shall connect the line again. The number of errors shall be counted again after successful logon of the user-end.

After the Logon process is completed, TWSE-end starts to send the replay information in FIX/FAST format. For details of the message body, refer to “Message format and template”.

Summary and process follow chart of message transmission:

- (V) The user end delivers a message for resend of search information.
- (VI) TWSE replies with market information. If the user end delivers invalid request for search resend, TWSE will reply

with the Market Data Request Reject (Application Level) for accumulative counting of the repetitions.

- (VII) If the TWSE-end does not transmit any message after the HeartBtInt (10 seconds), a Heartbeat message will be sent.
- (VIII) If the user-end transmits a message not supported by the system, TWSE-end will reject Session information (Reject-Session Level) and count the repetitions of rejection accumulatively.
- (IX) If rejection has been repeated 10 times accumulatively, and the 10<sup>th</sup> reply is Rejection-Session level, TWSE will disconnect the connection. If the 10<sup>th</sup> rejection is Market Data Request Reject (Application Level), TWSE-end will reply to the Reject-Session Level and disconnect the line.

User-end

TWSE-end

1: The user end delivers a message for resend of search information

2a: TWSE end replies with market information



2b: TWSE replies with market information. If the user end delivers invalid request for search resend, TWSE will reply with the Market Data Request Reject (Application Level) for accumulative counting of the repetitions.



3: If the TWSE-end does not transmit any message after the HeartBtInt (10 seconds), a Heartbeat message will be sent.



4: If the user-end transmits a message not supported by the system, TWSE-end will reject Session information (Reject-Session Level) and count the repetitions of rejection accumulatively.



5. If rejection has been repeated 10 times accumulatively, and the 10<sup>th</sup> reply is Rejection-Session level, TWSE will disconnect the connection. If the 10<sup>th</sup> rejection

is Market Data Request Reject (Application Level), TWSE end will reply to the Reject-Session Level and disconnect the line.



If the user-end does not receive any message during the HeartBtInt + reasonable transmission time (20% HeartBtInt), the connection is confirmed failed and the line will be disconnected and reconnected again.

### **III. Logout**

The same as the logout process of real-time information feed (Logout).

## Six.

### Description of Message Format and Template

#### I. Standard Header and Trailer

Each message shall contain a standard header and trailer. If the format of the message is not supported by the format in this handbook, the TWSE-end will reply with the reject session (Reject-Session Level). If the format in the message is supported by the format in this handbook, but not the Tag field, TWSE-end will omit the tag value.

#### 1. Standard Header

##### FIX messages

Tag	Field Name	Req	Description
8	BeginString	Y	The starting of the message
9	BodyLength	Y	The length of the message
35	MsgType	Y	The type of message
34	MsgSeqNum	Y	The sequence number of the message up to 8-digit number
49	SenderCompID	Y	Sender code
52	SendingTime	Y	Transmission time Standard UTC format. YYYYMMDD-HH:MM:SS.sss
56	TargetCompID	Y	Receiver code

- (1) BeginString: it must be the 1<sup>st</sup> field of the message; enter FIX.4.4 for the value.
- (2) BodyLength: it must be the 2<sup>nd</sup> field of the message; the value is the total bit length from the field of BodyLength to the field before Checksum.
- (3) MsgType: it must be the 3<sup>rd</sup> field of the message for explaining the type of FIX message.
- (4) MsgSeqNum: message sequence number up to 8-digit number.  
The message sequence number of management information must be 0.  
The message sequence number of application information



shall be the same as the ApplSeqNum of the application information.

(5) SenderCompID: Sender code

TWSE = XTAI; User-end=MDSC.

(In accordance with ISO 10383 Market Identifier Code standard)

(6) SendingTime: message transmission time.

The format is standard UTC format.

Year/month/day-hour: minute:second:millisecond

(YYYYMMDD-HH:MM:SS.sss)

(7) TargetCompID: Receiver code.

TWSE = XTAI; User-end = MDSC

(In accordance with ISO 10383 Market Identifier Code standard)

#### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remark
8	BeginString	String	constant	FIX.4.4
9	BodyLength	UInt32	-	
35	MsgType	String	-	
34	MsgSeqNum	UInt32	-	
49	SenderCompID	String	-	XTAI MDSC
52	SendingTime	String	-	
56	TargetCompID	String	-	XTAI MDSC

## 2. Standard Trailer

### FIX message

Tag	Field Name	Req	Description
10	Checksum	Y	Checking code

(1) Checksum- Checking function

The equation of this code is adding the binary value of the field starting from the field of BeginString to the field before Checksum. The sum total will be divided by 256 and the remainder is entered in the field of CheckSum as value for confirmation. This value will be converted to a 3-digit ASCII number for visibility in transmission.

For example, when the checking mechanism of CheckSum gives the value of 274, it will be divided by 256. The remainder will be converted to a 3-digit ASCII number, 018. This value will be entered in the field of CheckSum.

The Equation for the calculation of the confirmation code is shown below:

```
Char *GenerateChecksum( char *buf, long bufLen )
{
    static char tmpBuf[ 4 ];
    long idx;
    unsigned int cks;

    for( idx=0L, cks=0; idx < bufLen; cks += (unsigned
int)buf[ idx++ ] );
    sprintf( tmpBuf, "%03d", (unsigned int)( cks %
256 ) );
    return ( tmpBuf );
}
```

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
10	CheckSum	String	-	

## II. Management Information

### 1. Logon message

This message is initiated by the user-end and replied by TWSE-end. When the user-end needs to establish connection, it must send the logon message to TWSE-end. TWSE-end will use the message to verify the user name and password in order to authenticate the ID of the user. Once verified, TWSE-end will send reply message to the user-end for confirmation, and starts the transmission.

#### FIX message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType=message type <hr/> <b>Value      Meaning</b> A            Logon
98	EncryptMethod	Y	encryption setup
108	HeartBtInt	Y	HeartBtInt setup (unit: second)
553	Username	N	User name verification  This field is necessary if the message is sent from the user-end. The password shall be authenticated to ensure the line is used by the right information user.  This field will not be transmitted if the message is replied by TWSE-end.  Users shall write to TWSE for requesting change in the password. TWSE shall respond to the request of the user accordingly.
554	Password	N	Password  This field is necessary if the message is sent from the user-end. The password shall be authenticated to ensure the line is used by the right information user.  This field will not be transmitted if the message is replied by TWSE-end.

			Users shall write to TWSE for requesting change in the password. TWSE shall respond to the request of the user accordingly.
	<i>Standard Trailer</i>	Y	

This message is initiated by the user-end and replied by TWSE-end.

(1) MsgType : A = Logon

(2) Encrypt Method : 0 = No encryption currently

(3) HeartBtInt : 10 = The HeartBtInt is default at 10 seconds

In the HeartBtInt where no message is sent, TWSE will send one-way HeartBeat message at 10 seconds per transmission.

The user-end is not allowed to adjust this value.

(4) Username: code for verification

This field is necessary if the message is sent from the user-end. The password shall be authenticated to ensure the line is used by the right information user.

This field will not be transmitted if the message is replied by TWSE-end.

Users shall write to TWSE for requesting change in the password. TWSE shall respond to the request of the user accordingly.

(5) Password: password for authentication of user ID

This field is necessary if the message is sent from the user-end. The password shall be authenticated to ensure the line is used by the right information user.

This field will not be transmitted if the message is replied by TWSE-end.

Users shall write to TWSE for requesting change in the password. TWSE shall respond to the request of the user accordingly.

#### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
98	EncryptMethod	UInt32	constant	0

108	HeartBtInt	UInt32	-	
553	Username	String	-	
554	Password	String	-	
<i>Standard Trailer</i>				

2. Heartbeat message

In the HeartBtInt where no message is sent, TWSE will send one-way HeartBeat message at 10 seconds per transmission to confirm normal line connection.

If the user-end does not receive any message during the HeartBtInt + reasonable transmission time (20% HeartBtInt), the connection may be failed and the user-end should disconnect the line and then connect again.

FIX message

Tag	Field Name	Req	Description				
	<i>Standard Header</i>	Y	MsgType= message type <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Heartbeat</td> </tr> </tbody> </table>	value	meaning	0	Heartbeat
value	meaning						
0	Heartbeat						
	<i>Standard Trailer</i>	Y					

This HeartBeat message is sent from TWSE-end in one-way direction to the user-end.

MsgType : 0 = Heartbeat

FAST Template :

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
<i>Standard Trailer</i>				

3. Session reject message (Reject–Session Level)

If the TWSE-end receives a message not verified by the

field, it will send out a Session reject message. The RefSeqNum field shows the reject message. The RefMsgType field shows the type of message being rejected. The SessionRejectReason field shows the error code for the rejection. The Text field shows the reasons of the error for rejection.

#### FIX message

Tag	Field Name	Req	Description				
	<i>Standard Header</i>	Y	MsgType=message type <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>Reject-Session Level</td> </tr> </tbody> </table>	value	meaning	3	Reject-Session Level
value	meaning						
3	Reject-Session Level						
45	RefSeqNum	Y	The code of rejected message				
372	RefMsgType	N	Type of message being rejected				
373	SessionRejectReason	N	Error code				
58	Text	N	Reasons of the error				
	<i>Standard Trailer</i>	Y					

- (1) MsgType : 3 = Reject Session message
- (2) RefSeqNum: the code of reject message
- (3) RefMsgType: type of message being rejected
- (4) SessionRejectReason: error code  
 00 = Unauthorized client access  
 01 = Invalid client operation
- (5) Text: description of the reasons of the error (no specific length)

#### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
98	RefSeqNum	UInt32	-	
372	RefMsgType	String	-	
373	SessionRejectReason	String	-	
58	Text	String	-	

<i>Standard Trailer</i>
-------------------------

4. Logout Message

TWSE-end will automatically send a logout message to the user-end when the transmission of market information ends. On receiving the logout message, the user-end shall reply to confirm the logout message so that TWSE can confirm the connection is ended normally.

If TWSE-end does not receive the logout message from the user-end after timeout (default at 60 seconds), it will automatically disconnect the line.

FIX message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType= message type <b>Value    meaning</b> ----- 5        Logout
58	Text	Y	description of logout message
	<i>Standard Trailer</i>	Y	

This message is initiated by the TWSE-end, and replied by the user-end.

(1) MsgType: 5 = logout message

(2) Text: description of logout message (no specific length)

Current session EOD= ending of information feed

Rebuild operation finished= ending of information replay

Rebuild operation aborted=abortion of information replay

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
58	Text	String	-	
<i>Standard Trailer</i>				

5. Search Resend Message

5.1. Search Research Request Message

FIX Message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType= message type <b>Value meaning</b> V Market Data Request
262	MDReqID	Y	Resend Request Code
1180	AppID	Y	AP transmission code for resend request
1182	App1BegSeqNum	Y	AP transmission beginning code for resend request
1183	App1EndSeq	Y	AP transmission ending code for resend request
	<i>Standard Trailer</i>	Y	

- (1) MDReqID: Resend request code  
Coding principle: YYYYMMDD-HH:MM:SS.sss or SequenceID  
(The time point for sending the request.)
- (2) AppID: AP transmission code for resend request.
- (3) App1BegSeqNum: AP transmission beginning code for resend request.  
This code must be greater than, smaller than 0 or equal to 99999999.
- (4) App1EndSeqNum: AP transmission ending code for resend request  
This code must be greater than, smaller than 0 or equal to 99999999, and must be greater than or equal to App1BegSeqNum, and congruent with the conditions of App1EndSeqNum-App1BegSeqNum smaller than or equal to 1000.

FAST Template

Tag	Field Name	FieldType	Field Encoding	Remarks
<i>Standard Header</i>				
262	MDReqID	String	-	
1180	AppID	String	-	
1182	App1BegSeqNum	String	-	
1183	App1EndSeqNum	String	-	



<i>Standard Trailer</i>
-------------------------

5.2.

Search Resend Request Reject

Fixed Message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType= message type <b>Value</b> <b>meaning</b> V    Market Data Request
262	MDReqID	Y	Resend Request Reject Code
281	MDReqRejReason	Y	Reason for Resend Request Reject
58	Text	Y	Description of error message
	<i>Standard Trailer</i>	Y	

- (1) MDReqID: Resend Request Reject
- (2) MDReqRejReason: The reason for resend request reject.
  - 00: Invalid requested AppID
  - 01: Invalid requested App1BegSeqNum
  - 02: Invalid requested App1EndSeqNum
  - 03: Invalid requested sequence range
- (3) Text: description of error message

FAST Template

Tag	Field Name	FieldType	Field Encoding	Remarks
<i>Standard Header</i>				
262	MDReqID	String	-	
281	MDReqJReason	String	-	
58	Text	String	-	
<i>Standard Trailer</i>				

### **III. Application message:**

After successful logon by the user-end, the TWSE-end starts to transmit one-way application messages (market information of all types); the common field of the body of application message is defined as:

1. Type of application message , ApplID (Tag#1180), like d1, which represents basic data of individual common stocks at TWSE, and d2 represents full-name information of call (put)warrants at TWSE.
2. Sequence of application message, ApplSeqNum (Tag#1181). Sequential number of each type of application message starts with 1.
3. Ending message of application message transmission:
  - (1) ApplSeqNum (Tag#1181) has the code of “99999999”.
  - (2) Message transmission record, ApplLastSeqNum (Tag#1350), for user-end to check the receiving message is completed. This field cannot be sent if transmission is not completed.

1.

## Basic Data of Individual Common Stocks at TWSE (d1)

## FIX message

Tag	Field Name		Req	Description						
	<i>Standard Header</i>		Y	MsgType= message type  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>d</td> <td>Security Definition</td> </tr> </tbody> </table>	value	meaning	d	Security Definition		
value	meaning									
d	Security Definition									
1180	ApplID		Y	Type of application message  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>d1</td> <td>basic data of individual common stocks at TWSE</td> </tr> </tbody> </table>	value	meaning	d1	basic data of individual common stocks at TWSE		
value	meaning									
d1	basic data of individual common stocks at TWSE									
1181	ApplSeqNum		Y	application message S/N						
1350	ApplLastSeqNum		N	transmission record						
48	SecurityID		N	stock code						
22	SecurityIDSource		N	codification of stock  <table border="1"> <thead> <tr> <th>value</th> <th>definition</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>TWSE assigned</td> </tr> </tbody> </table>	value	definition	8	TWSE assigned		
value	definition									
8	TWSE assigned									
292	CorporateAction		N	Notes to new listings  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>new listings</td> </tr> </tbody> </table>	value	meaning	D	new listings		
value	meaning									
D	new listings									
1227	ProductComplex		N	industry category						
1151	SecurityGroup		N	stock category						
55	Symbol		N	Stock abbreviation in Chinese						
1148	LowLimitPrice		N	Fall stop price						
1149	HighLimitPrice		N	Rise stop price						
1150	TradingReferencePrice		N	Reference price today						
870	NoInstrAttrib		N	warrant data circuit number						
→	871	InstrAttribType	N	Types of data on warrants  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Exercise volume of warrants on last business day</td> </tr> <tr> <td>102</td> <td>Cancellation volume of warrants on last business day</td> </tr> </tbody> </table>	value	meaning	101	Exercise volume of warrants on last business day	102	Cancellation volume of warrants on last business day
value	meaning									
101	Exercise volume of warrants on last business day									
102	Cancellation volume of warrants on last business day									

				103	Total issuance volume of warrants
				104	Warrant exercise ratio
				105	Warrant exercise price
→	872	InstrAttribValue	N	body of warrant data	
561	RoundLot		N	Trading in lots	
15	Currency		N	transaction currency code	
107	SecurityDesc		N	face value not \$10	
				<b>value</b>	<b>meaning</b>
				01	face value not \$10
				02	no face value
	<i>Standard Trailer</i>		Y		

- (1) ApplID: category of application message.  
d1= basic data on individual common stocks at TWSE
- (2) ApplSeqNum: Application message code.  
Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.
- (3) ApplLastSeqNum: Transmission Records.  
At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.
- (4) SecurityID: Stock Code  
The stock code assigned by TWSE.
- (5) SecurityIDSource: the codification of stock code  
8= assigned by TWSE under the principle of stock coding at TWSE of the Republic of China and uniformly assigned by TWSE.
- (6) CorporateAction: New listing  
D=new listing.
- (7) ProductComplex: industry category  
Refer to the attached industry category code.
- (8) SecurityGroup: stock category

Refer to the attached stock code category.

- (9) Symbol: Stock abbreviation in Chinese.
- (10) LowLimitPrice: Fall stop price  
Special definition: treasury bonds = recent trading price.
- (11) HighLimitPrice: Rise stop price  
Special definition: treasury bonds = recent trading price.
- (12) TradingReferencePrice: Reference price today.  
Special definition: treasury bonds= 0 (no Rise and Fall limits)
- (13) NoInstrAttrib: warrant data nested loop number.
  - a. InstrAttribType: warrant data category
    - 101= exercise volume of warrants on the last business day
    - 102=cancellation volume of warrants on the last business day.
    - 103= balance of warrant issuance volume
    - 104= warrant exercise ratio
    - 105=warrant exercise price
  - b. InstrAttribValue: Body of warrant data
    - Body of data corresponding to categories of warrant data
    - InstrAttribType =101/102/103: this field shows warrant of 1000 units.
    - InstrAttribType =104: the record of the quantity of shares to be converted with 1000 warrant units. For index warrants, this is the record of the latest information on the quantity of shares to be converted with 1000 warrant units. For example, if the underlying asset of a warrant is common stocks, the value of this field is 1000.00 meaning the exercise ratio of 1000 warrant units is 1. If the value of this field is 300.00, it means the exercise ration of 1000 warrant units is 0.3. If the underlying asset of the warrant is index, the value of this field is 1000.00 and means the exercise ratio of each warrant unit is 1. If the value of this field is 500.00, this means that the exercise ratio of each warrant unit is 0.5.

InstrAttribType =105: this shows the latest exercise price of warrant. For index warrant, this shows the information on the latest exercise index of warrant.

(14) RoundLot: quantity of trade

The trading quantity is default at 1000 and each unit for 1 share.

(15) Currency: transaction currency code

If the transaction currency code is left blank, the currency for transaction is NTD.

(16) SecurityDesc: face value not at \$10

If this field of face value not at \$10 is left blank, it means the face value is \$10.

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	d1
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
292	CorporateAction	String	copy	
1227	ProductComplex	String	copy	
1151	SecurityGroup	String	copy	
55	Symbol	String	copy	
1148	LowLimitPrice	String	delta	
1149	HighLimitPrice	String	delta	
1150	TradingReferencePrice	String	delta	
870	NoInstrAttrib	Length	default	5
871	InstrAttribType	UInt32	copy	
872	InstrAttribValue	String	delta	
561	RoundLot	UInt32	default	1000
15	Currency	String	default	
107	SecurityDesc	String	-	
<i>Standard Trailer</i>				

2. Full-name information on call (put) warrants at TWSE

(d2)

FIX message

Tag	Field Name	Req	Description				
	<i>Standard Header</i>	Y	MsgType = message type  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>d</td> <td>Security Definition</td> </tr> </tbody> </table>	value	meaning	d	Security Definition
value	meaning						
d	Security Definition						
1180	ApplID	Y	application message category  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>d2</td> <td>Full name of call (put) warrant at TWSE</td> </tr> </tbody> </table>	value	meaning	d2	Full name of call (put) warrant at TWSE
value	meaning						
d2	Full name of call (put) warrant at TWSE						
1181	ApplSeqNum	Y	application message sequence number				
1350	ApplLastSeqNum	N	transmission records on warrant				
48	SecurityID	N	warrant code				
22	SecurityIDSource	N	Codification of warrant code  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>Assigned by TWSE</td> </tr> </tbody> </table>	value	meaning	8	Assigned by TWSE
value	meaning						
8	Assigned by TWSE						
58	Text	N	Full name of call (put) warrant				
	<i>Standard Trailer</i>	Y					

- (1) ApplID: application message category  
d2= Full name of call (put) warrant at TWSE
- (2) ApplSeqNum: Application message S/N  
The sequence number starts from 1, “99999999” means the end of application message transmission.
- (3) ApplLastSeqNum: transmission records on warrant  
At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.
- (4) SecurityID: Stock Code  
The stock code assigned by TWSE.
- (5) SecurityIDSource: the codification of stock code  
8= assigned by TWSE under the principle of stock coding at



TWSE of the Republic of China and uniformly assigned by TWSE.

(6) Text:

Full name of call (put) warrant is composed by the following fields:

A. Warrant abbreviation		SOH	B. underlying asset	C.maturity	D.warrant form	E. warrant variety	F. warrant type	G. reserve fields
Issuer	code							
Fubon	01	—	TSMC□□□	20080320	Europe	Put	Down	Blank
Fubon	02	—	UMC□□□□	20080520	American	Call	Up	Blank
Fubon	03	—	Composite□□□□	20080622	American	Call	□	Blank
Fubon	04	—	Taiex index□	20080820	Europe	Put	□	Blank
Fubon	05	—	TSMC□□□	20080920	American	Call	Bull	Blank
Fubon	06	—	TSMC□□□	20081120	Europe	Put	Bear	Blank
Length:6		2	10	8	2	2	2	8

**Description of fields:**

- A. Warrant Abbreviation: contains the abbreviation of the issuer (2 Chinese Characters) + S/N (2 numbers), the same as the Stock Name displayed at present.
- B. Underlying asset: Use the security name for particular underlying asset (3 Chinese characters, identical with the “security name” as disclosed or the index name (5 Chinese characters). If it is not a particular underlying asset, use “portfolio of □” (3 Chinese characters).[ □= blank]. If it is foreign underlying asset, including, “foreign securities” (including stock and depository receipts”, “overseas indexes”, and “foreign ETF”.
- C. Maturity Date: year, month and day (8 numbers) in Gregorian calendar.
- D. Warrant Form: European-Euro and American-Am (1 Chinese character).
- E. Warrant Variety: Call-Call; Put-Put (1 Chinese character).
- F. Warrant type: Currently issued warrants: General—□; Up-and-Out Call Warrant—Up; Down-and-Out Put Warrant—Low; Special Warrant Issued in Future: Bull

(down-and-out warrant within the price) and Bear (up-and-out warrant within the price); participation guaranteed warrant—guaranteed (1 Chinese character).

G. Reserved Field: For new warrant information in future.

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	d2
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
58	Text	String	-	
<i>Standard Trailer</i>				

3.

## Status of Securities at TWSE (f1)

## FIX message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType= message type <b>value</b> <b>meaning</b> ----- f              Security Status
1180	ApplID	Y	Application message type <b>value</b> <b>meaning</b> ----- f1             Security status at TWSE
1181	ApplSeqNum	Y	Application message S/N
1350	ApplLastSeqNum	N	data transmission record
48	SecurityID	N	stock code
22	SecurityIDSource	N	Codification of stock code <b>value</b> <b>meaning</b> ----- 8              TWSE assigned
107	SecurityDesc	N	status of underlying securities <b>value</b> <b>meaning</b> ----- 01            Attention 02            Disposition 03            Attention and disposition 04            Disposition again 05            Attention and disposition again 06            Disposition with flexibility 07            Attention and disposition with flexibility T             terminated trade on current day: delisting S             Suspended trade on current day: trading halt H             Halt trading of the day R             Resume trading of the day TR            Unusual TV promotion U             Unusual situation
60	TransactTime	N	Transaction time
	<i>Standard</i>	Y	

	<i>Trailer</i>		
--	----------------	--	--

- (1) ApplID: application message category  
f1= status of securities at TWSE
- (2) ApplSeqNum: Application message S/N  
The sequence number starts from 1, “99999999” means the end of application message transmission.
- (3) ApplLastSeqNum: transmission total record  
At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.
- (4) SecurityID: stock Code  
The stock code assigned by TWSE
- (5) SecurityIDSource: the codification of stock code  
8= assigned by TWSE under the principle of stock coding at TWSE of the Republic of China and uniformly assigned by TWSE.
- (6) SecurityDesc: the status of underlying securities  
For Attention and Disposition measures, refer to Article 4 and Article 6 of “Main Points of Announcement or Notice of Transactions and Disposition” of TWSE.  
01= Attention  
02= Disposition  
03= Attention and disposition  
04= Disposition again  
05= Attention and disposition again  
06= Disposition with flexibility  
07= Attention and disposition with flexibility

Stock suspended from trading of the day: not found in the basic data of individual common stocks on the day at TWSE.

T=Stocks terminated for trading of the day: delisting

S=Stocks suspended for trading of the day: halt in trading

H= Halt for trading of the day

R=Resume trading of the day

TR=Unusual TV promotion

U=Unusual situation

(7) TransactTime: transaction time

Status of underlying securities =H or R, the format in this field is YYYYMMDD-HH:MM:SS.

Status of underlying securities = 'H' means the time the stocks halted for trading of the day.

Status of underlying securities = 'R' means the time the stocks resumed for trading of the day.

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	f1
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
107	SecurityDesc	String	copy	
60	TransactTime	String	tail	
<i>Standard Trailer</i>				

4. Real-time market information of common stocks at  
TWSE (X1/X2)

FIX message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType= message type  <b>value      meaning</b> <hr/> X      Market Data Incremental Refresh
1180	ApplID	Y	Application message type  <b>value      meaning</b> <hr/> X1      Real-time market information on auction trade of common stocks of 1 <sup>st</sup> IP at TWSE. X2      Real-time market information on auction trade of common stocks of 2 <sup>nd</sup> IP at TWSE.
1181	ApplSeqNum	Y	application message S/N
1350	ApplLastSeqNum	N	transmission record
48	SecurityID	N	stock code
22	SecurityIDSource	N	codification of stock  <b>value      meaning</b> <hr/> 8      TWSE assigned
273	MDEntrytime	N	matching time
31	LastPx	N	The last trading price
1020	TradeVolume	N	current trade volume
14	CumQty	N	Cumulative trade volume
326	SecurityTradingStatus	N	Trading status of underlying securities  <b>value      meaning</b> <hr/> 101      Simulated match display before closing 102      Instantaneous price stabilizing measure (Rise trend) 103      Instantaneous price stabilizing measures (Fall

			trend)										
1022	MDFeedType	N	Display category <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Overlay order book</td> </tr> <tr> <td>102</td> <td>Empty order book</td> </tr> <tr> <td>103</td> <td>Change order book</td> </tr> <tr> <td>104</td> <td>Keep order book</td> </tr> </tbody> </table>	value	meaning	101	Overlay order book	102	Empty order book	103	Change order book	104	Keep order book
value	meaning												
101	Overlay order book												
102	Empty order book												
103	Change order book												
104	Keep order book												
264	MarketDepth	N	Order book disclosure depth <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>TWSE disclose trading price and volume of 5 stock transactions</td> </tr> </tbody> </table>	value	meaning	5	TWSE disclose trading price and volume of 5 stock transactions						
value	meaning												
5	TWSE disclose trading price and volume of 5 stock transactions												
268	NoMDEntries	Y	Change in trading price and volume nested loop number										
→	269	MDEntry Type	Y Type <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Bid</td> </tr> <tr> <td>1</td> <td>Offer</td> </tr> <tr> <td>E</td> <td>Simulated Sell</td> </tr> <tr> <td>F</td> <td>Simulated Buy</td> </tr> </tbody> </table>	value	meaning	0	Bid	1	Offer	E	Simulated Sell	F	Simulated Buy
value	meaning												
0	Bid												
1	Offer												
E	Simulated Sell												
F	Simulated Buy												
→	279	MDUpdateAction	N Update <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>New</td> </tr> <tr> <td>1</td> <td>Change</td> </tr> <tr> <td>2</td> <td>Delete</td> </tr> </tbody> </table>	value	meaning	0	New	1	Change	2	Delete		
value	meaning												
0	New												
1	Change												
2	Delete												
→	270	MDEntry Px	N Price										
→	271	MDEntry Size	N Volume										
870	NoInstrAttrib	N	Rise/Fall Stop display nested loop number										
→	871	InstrAttribType	N Target <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Last trading price</td> </tr> <tr> <td>102</td> <td>Best Bid</td> </tr> <tr> <td>103</td> <td>Best Offer</td> </tr> </tbody> </table>	value	meaning	101	Last trading price	102	Best Bid	103	Best Offer		
value	meaning												
101	Last trading price												
102	Best Bid												
103	Best Offer												
→	872	InstrAttrib	N Content										



		bValue		<table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Rise stop price</td> </tr> <tr> <td>102</td> <td>Fall stop price</td> </tr> </tbody> </table>	value	meaning	101	Rise stop price	102	Fall stop price
value	meaning									
101	Rise stop price									
102	Fall stop price									
	<i>Standard Trailer</i>		Y							

- (1) ApplID: type of application message  
X1= Stock market information  
X2=Warrant market information
- (2) ApplSeqNum: application message S/N  
Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.
- (3) ApplLastSeqNum: transmission record  
At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.
- (4) SecurityID: stock code  
The stock code assigned by TWSE.
- (5) SecurityIDSource: codification of stock  
8= assigned by TWSE under the principle of stock coding at TWSE of the Republic of China and uniformly assigned by TWSE.
- (6) MDEntrytime: matching time  
The format is HH:MM:SS.  
Special time: the instantaneous price stabilizing measure in effect, matching halted (Refer to Tag 326). The field of matching time recorded the starting time and ending time of halt matching.
- (7) LastPx: last trading price
- (8) TradeVolume: current trading volume. If there is no match for trade, the content value is 0.
- (9) CumQty: cumulative trading volume. If there is no match for trade, the content value is the cumulative trading volume of the last transaction.

(10) SecurityTradingStatus: trading status of underlying securities

101= Simulated match display before closing

102= Instantaneous price stabilizing measure (Rise trend)

103= Instantaneous price stabilizing measures (Fall trend)

(11) MDFeedType: Display Category

101= Overlay order book. The user cleared up the order book of underlying securities and used the information on trading price and volume in the circuit of Tag 268 to rebuild the information on the price and trading volume of securities.

102= Empty order book. The user emptied the order book of underlying securities.

103= Change order book. The user used the information on the trading price and volume in the circuit of Tag 268 and changed the original trading price and volume of the underlying securities with Tag 279.

104= Keep order book. The user did not make any change to the trading price and volume of the underlying securities.

The display of order book is explained in the supplementary note to this section of the handbook.

(12) MarketDepth: display order book depth

5= display the trading prices and volumes of 5 stocks

TWSE displays 5 stocks being matched but no trade except:

A. Treasury bonds, only the trading price and volume of 1 issue is displayed.

B. Instantaneous price stabilizing measure (halt matching), with trading price and cumulative volume of the previous transaction displayed, but not both the trading price and volume.

C. Display of simulated match before closing, with the trading price of the best match for transaction displayed, but not the volume.

(13) NoMDEntries: change in trading price and volume nested loop number

The value of this field = '0' if the transmission record is sent.

When Tag 1022= '102' (empty the order book), the value of this field = '0'.

A.MDEntryType: Type

When Tag268 not equal to '0', this field is necessary.

B.MDUpdateAction: mode of change

0=new

1=change

2=deletion

C.MDEntryPx: price

D.MDEntrySize: volume

The unit will be the trading unit of the underlying securities.

(14) NoInstrAttrib: Rise/Fall Stop display nested loop number.

B.InstrAttribType: target

101= the last trading price

102= the best bid

103= the best offer

C.InstrAttribValue: content

101= Rise stop price

102= Fall stop price

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	X1 X2
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
273	MDEntryTime	String	tail	
31	LastPx	String	delta	
1020	TradeVolume	UInt32	delta	
14	CumQty	UInt32	delta	
326	SecurityTradingStatus	String	copy	
1022	MDFeedType	String	copy	
264	MarketDepth	UInt32	default	5
268	NoMDEntries	Length	copy	
269	MDEntryType	String	copy	
279	MDUpdateAction	String	copy	
270	MDEntryPx	String	delta	
271	MDEntrySize	UInt32	delta	
870	NoInstrAttrib	Length	copy	
871	InstrAttribType	UInt32	copy	
872	InstrAttribValue	UInt32	copy	
<i>Standard Trailer</i>				

<Supplementary notes>

The application of format for processing the transmission of market information on regular transactions from TWSE in real-time is special and requires explanation here. Real-time market information on regular transactions at TWSE is transmitted in two modes on the basis of the composition of the fields:

(I) Market Data Snapshot

In this mode, the value of content in field 1022 contains 101 (overlay).

1. The value of the content of field 1022 is 101

This means the transmission of market information for this time is complete information on trading price and volume. If the user-end receives the content value of 101 in this field, it should clear up the order book of the underlying securities, and rebuild the information on the trading price and volume of securities on the basis of the information on trading price and volume brought by the circuit of field 268.

(II) Market Data Incremental Refresh

In this mode, the content value of field 1022 contains 101 (overlay), 102 (empty), 104 (keep), and 103 (change).

1. The content value of field 1022 is 101

The same as in the Market Data Snapshot mode

2. The content value of field 1022 is 102

The same as in the Market Data Snapshot mode

3. The content value of field 1022 is 103

This means that the market information transmitted for this time shows different trading prices and volume. If the user-end receives the content value of field 1022 is 103, use the information on trading price and volume brought by the circuit of field 268 to change the original information on trading price and volume of the underlying securities on the basis of the update instruction in field 279 (0=new, 1=change, 2=delete):

Examples:

The information shows the first transaction of the purchase of particular stock

1. Buy at \$15 for 1000 units
2. Buy at \$14.9 for 500 units
3. Buy at \$14.8 for 200 units
4. Buy at \$14.6 for 1500 units

The differentiation in price will be applied to the field showing the information on purchase price and volume.

Field 1022=103 (shows differences)

Field 268=4 (shows 4 entries of data)

[Volume under new specific purchase price]

Field 269=0 (type=purchase)

Field 279=0 (mode of change=new)

Field 270=15(Price=\$15)

Field 271=1000 (Volume =1000 units)

[Volume under new specific purchase price]

Field 269=0 (type=purchase)

Field 279=0 (mode of change=new)

Field 270=14.9 (Price=\$14.9)

Field 271=500 (Volume=500 units)

[Volume under new specific purchase price]

Field 269=0 (type=purchase)

Field 279=0 (mode of change=new)

Field 270=14.8 (Price=\$14.8)

Field 271=200 (Volume =200 units)

[Volume under new specific purchase price]

Field 269=0 (type=purchase)

Field 279=0 (mode of change=new)

Field 270=14.6 (Price=\$14.6)

Field 271=1500 (Volume =1500 units)

In the FIX format, the display will be:

```
“1022=103<SOH>268=4<SOH>1022=103<SOH>268=4<SOH>269=0<SOH>279=0<SOH>270=15<SOH>271=1000<SOH>269=0<SOH>279=0<SOH>270=14.9<SOH>271=500<SOH>269=0<SOH>279=0<SOH>270=14.8<SOH>271=200<SOH>269=0<SOH>279=0<SOH>270=14.6<SOH>271=1500”
```

The information shows the second transaction of the purchase of particular stock

1. Buy at \$15 for 800 units
2. Buy at \$14.8 for 200 units

3. Buy at \$14.7 for 100 units
4. Buy at \$14.6 for 1500 units
5. Buy at \$14.5 for 200 units

The differentiation of the two entries of data is shown in the table below:

Data on the 1 <sup>st</sup> transaction of purchase	Data on the 2 <sup>nd</sup> transaction of purchase	Differentiation
Buy at \$15 for 1000	Buy at \$15 for 800	Change (volume)
Buy at \$14.9 for 500		Delete
Buy at \$14.8 for 200	Buy at \$14.8 for 200	Keep
	Buy at \$14.7 for 100	New
Buy at \$14.6 for 1500	Buy at \$14.6 for 1500	Keep
	Buy at \$14.5 for 200	New

The differentiation in price will be applied to the field showing the information on purchase price and volume

Field 1022=103 (shows difference)

Field 268=4 (shows 4 entries of data)

[Change specific purchase price and volume]

Field 269=0 (type=purchase)

Field 279=1 (mode of change=change)

Field 270=15 (price=\$15)

Field 271=800 (volume=800 units)

[Delete specific purchase price and volume]

Field 269=0 (type=purchase)

Field 279=2 (mode of change=delete)

Field 270=14.9 (price=\$14.9)

Field 271=500 (volume=500 units)

Field 269=0 (type=purchase)

Field 279=0 (mode of change=new)

Field 270=14.7 (price=\$14.7)

Field 271=100 (volume=100 units)

Field 269=0 (type=purchase)  
Field 279=0 (mode of change=new)  
Field 270=14.5 (price=\$14.5)  
Field 271=200 (volume=200 units)

Display in FIX format

```
“1022=103<SOH>268=4<SOH>1022=103<SOH>268=4<S  
OH>269=0<SOH>279=1<SOH>270=15<SOH>271=800<S  
OH>269=0<SOH>279=2<SOH>270=14.9<SOH>271=500<  
SOH>269=0<SOH>279=0<SOH>270=14.7<SOH>271=100  
<SOH>269=0<SOH>279=0<SOH>270=14.5<SOH>271=20  
0”
```

- (1) The content value of field 1022 is 104  
The same as in the Market Data Snapshot mode



5. Information on Completed Fixed Price Securities Trade  
at TWSE (X3)

FIX message

Tag	Field Name	Req	Description				
	<i>Standard Header</i>	Y	MsgType= message type  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>Market Data Incremental Refresh</td> </tr> </tbody> </table>	value	meaning	X	Market Data Incremental Refresh
value	meaning						
X	Market Data Incremental Refresh						
1180	ApplID	Y	Application message type  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>X3</td> <td>Information on completed fixed price securities trade at TWSE.</td> </tr> </tbody> </table>	value	meaning	X3	Information on completed fixed price securities trade at TWSE.
value	meaning						
X3	Information on completed fixed price securities trade at TWSE.						
1181	ApplSeqNum	Y	application message S/N				
1350	ApplLastSeqNum	N	transmission record				
48	SecurityID	N	stock code				
22	SecurityIDSource	N	codification of stock  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>TWSE assigned</td> </tr> </tbody> </table>	value	meaning	8	TWSE assigned
value	meaning						
8	TWSE assigned						
273	MDEntryTime	N	matching time				
31	LastPx	N	The last trading price				
1020	TradeVolume	N	current trade volume				
	<i>Standard Trailer</i>	Y					

(1) ApplID: type of application message

X3= Information on completed fixed price securities trade at TWSE

(2) ApplSeqNum: application message S/N

Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(3) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.

(4) SecurityID: stock code

The stock code assigned by TWSE

(5) SecurityIDSource: codification of stock

8= assigned by TWSE under the principle of stock coding at TWSE of the Republic of China and uniformly assigned by TWSE

(6) MDEntryTime: matching time

The format is HH:MM:SS

(7) LastPx: fixed price for trading of particular stock

(8) TradeVolume: trading volume of stocks at fixed price. The units are the shares for the trading of underlying stocks.

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	X3
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
273	MDEntryTime	String	tail	
31	LastPx	String	delta	
1020	TradeVolume	UInt64	delta	
<i>Standard Trailer</i>				

6. Real-time market information on Odd Lot Trade of Stocks at TWSE (X4)

FIX message

Tag	Field Name	Req	Description						
	<i>Standard Header</i>	Y	MsgType= message type <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>Market Data Incremental Refresh</td> </tr> </tbody> </table>	value	meaning	X	Market Data Incremental Refresh		
value	meaning								
X	Market Data Incremental Refresh								
1180	ApplID	Y	Application message type <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>X4</td> <td>Real-time market information on Odd Lot Trade of Stocks at TWSE</td> </tr> </tbody> </table>	value	meaning	X4	Real-time market information on Odd Lot Trade of Stocks at TWSE		
value	meaning								
X4	Real-time market information on Odd Lot Trade of Stocks at TWSE								
1181	ApplSeqNum	Y	application message S/N						
1350	ApplLastSeqNum	N	transmission record						
48	SecurityID	N	stock code						
22	SecurityIDSource	N	codification of stock <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>TWSE assigned</td> </tr> </tbody> </table>	value	meaning	8	TWSE assigned		
value	meaning								
8	TWSE assigned								
273	MDEntryTime	N	matching time						
31	LastPx	N	The last trading price						
1020	TradeVolume	N	current trade volume (unit:share)						
1022	MDFeedType	N	Display type <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Overlay order book</td> </tr> <tr> <td>102</td> <td>Empty order book</td> </tr> </tbody> </table>	value	meaning	101	Overlay order book	102	Empty order book
value	meaning								
101	Overlay order book								
102	Empty order book								
264	MarketDepth	N	Display the depth of order book <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Display the trading price of 1 transaction of odd lot stock trade at TWSE</td> </tr> </tbody> </table>	value	meaning	1	Display the trading price of 1 transaction of odd lot stock trade at TWSE		
value	meaning								
1	Display the trading price of 1 transaction of odd lot stock trade at TWSE								

268	NoMDEntries		Y	Change in trading price and volume nested loop number										
→	269	MDEntry Type	Y	Type <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Bid</td> </tr> <tr> <td>1</td> <td>Offer</td> </tr> <tr> <td>E</td> <td>Simulated Sell</td> </tr> <tr> <td>F</td> <td>Simulated Buy</td> </tr> </tbody> </table>	value	meaning	0	Bid	1	Offer	E	Simulated Sell	F	Simulated Buy
value	meaning													
0	Bid													
1	Offer													
E	Simulated Sell													
F	Simulated Buy													
→	279	MDUpdateAction	N	mode of change <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>New</td> </tr> </tbody> </table>	value	meaning	0	New						
value	meaning													
0	New													
→	270	MDEntry Px	N	Price										
870	NoInstrAttrib		N	Rise/Fall Stop display nested loop number										
→	871	InstrAttribType	N	Display type <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>bid price</td> </tr> <tr> <td>102</td> <td>Best bid</td> </tr> <tr> <td>103</td> <td>Best offer</td> </tr> </tbody> </table>	value	meaning	101	bid price	102	Best bid	103	Best offer		
value	meaning													
101	bid price													
102	Best bid													
103	Best offer													
→	872	InstrAttribValue	N	Display content <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Rise stop price</td> </tr> <tr> <td>102</td> <td>Fall stop price</td> </tr> </tbody> </table>	value	meaning	101	Rise stop price	102	Fall stop price				
value	meaning													
101	Rise stop price													
102	Fall stop price													
	<i>Standard Trailer</i>		Y											

(1) ApplID: type of application message

X4= real-time market information on Odd Lot Trade of Stocks at TWSE

(2) ApplSeqNum: application message S/N

(3) Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(4) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a

message of ending.

(5) SecurityID: stock code

Stock code assigned by TWSE.

(6) SecurityIDSource: codification of stock

8= assigned by TWSE under the principle of stock coding at TWSE of the Republic of China and uniformly assigned by TWSE.

(7) MDEntryTime: matching time

The format is HH:MM:SS.

(8) LastPx: trading price

This field will not be sent if the trading price is 0.

(9) TradeVolume: current trading volume (unit: share)

This field will not be sent if the trading price is 0.

(10) MDFeedType: Display Category

101= Overlay order book. The user cleared up the order book of underlying securities and used the information on trading price and volume in the circuit of Tag 268 to rebuild the information on the price and trading volume of securities.

102= Empty order book. The user emptied the order book of underlying securities.

(11) MarketDepth: display order book depth

1= Display the price of 1 transaction of odd lot stock trade.

(12) NoMDEntries: change in trading price and volume nested loop number

The value of this field = '0' if the transmission record is sent for ending the transmission.

When Tag 1022= '102' (empty the order book), the value of this field = '0'.

A. MDEntryType:

2 = Bid

3 = Offer

E = Simulated Sell

F = Simulated Buy

When Tag268 not equal to '0', this field is necessary.

B. MDUpdateAction: Mode of change

0 = New

C. MDEntryPx: Price

(13) NoInstrAttrib: Rise/Fall Limits Display nested loop number

A. InstrAttribType: Display type

101=Bid price

102=Best bid

103=Best offer

B. InstrAttribValue: Display content

101= Rise Stop Price

102=Fall Stop Price

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	X4
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
273	MDEntryTime	String	tail	
31	LastPx	String	delta	
1020	TradeVolume	UInt64	delta	
1022	MDFeedType	String	copy	
264	MarketDepth	UInt32	constant	1
268	NoMDEntries	Length	copy	
269	MDEntryType	String	copy	
279	MDUpdateAction	String	copy	0
270	MDEntryPx	String	delta	
870	NoInstrAttrib	Length	copy	
871	InstrAttribType	UInt32	copy	
872	InstrAttribValue	UInt32	delta	
<i>Standard Trailer</i>				



7. Statistics of Securities Trade at TWSE at Close of Market (WS1/WS2)

FIX message

Tag	Field Name		Req	Description												
	<i>Standard Header</i>		Y	MsgType= message type <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>W</td> <td>Market Snapshot</td> <td>Data (Full Refresh)</td> </tr> </tbody> </table>	value	meaning		W	Market Snapshot	Data (Full Refresh)						
value	meaning															
W	Market Snapshot	Data (Full Refresh)														
1180	ApplID		Y	Application message type <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>WS1</td> <td>Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade)</td> <td></td> </tr> <tr> <td>WS2</td> <td>Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade + broad lot trade)</td> <td></td> </tr> </tbody> </table>	value	meaning		WS1	Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade)		WS2	Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade + broad lot trade)				
value	meaning															
WS1	Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade)															
WS2	Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade + broad lot trade)															
1181	ApplSeqNum		Y	application message S/N												
1350	ApplLastSeqNum		N	transmission record												
48	SecurityID		N	stock code												
22	SecurityIDSource		N	codification of stock <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>8</td> <td colspan="2">TWSE assigned</td> </tr> </tbody> </table>	value	meaning		8	TWSE assigned							
value	meaning															
8	TWSE assigned															
268	NoMDEntries		Y	nested loop number												
→	269	MDEntryType	Y	Data type <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td colspan="2">Bid</td> </tr> <tr> <td>1</td> <td colspan="2">Offer</td> </tr> <tr> <td>4</td> <td colspan="2">Price at opening</td> </tr> </tbody> </table>	value	meaning		0	Bid		1	Offer		4	Price at opening	
value	meaning															
0	Bid															
1	Offer															
4	Price at opening															

				5	Price at close								
				7	Highest trading price								
				8	Lowest trading price								
				B	Statistics on trading								
→	270	MDEntryPx		N	Price								
→	870	NoInstrAttrib		N	Statistics on completed transactions								
→	→	871	InstrAttrib Type	N	Statistics of type of trade <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>trading amount</td> </tr> <tr> <td>102</td> <td>trading volume</td> </tr> <tr> <td>103</td> <td>trading record</td> </tr> </tbody> </table>	value	meaning	101	trading amount	102	trading volume	103	trading record
value	meaning												
101	trading amount												
102	trading volume												
103	trading record												
→	→	872	InstrAttrib Value	N	Content of statistics on completed transactions								
	<i>Standard Trailer</i>			Y									

(1) ApplID: type of application message

WS1= Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade)

WS2= Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade + broad lot trade).

(2) ApplSeqNum: application message S/N

Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(3) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.

(4) SecurityID: stock code

Stock code assigned by TWSE.

(5) SecurityIDSource: codification of stock

8= assigned by TWSE under the principle of stock coding at TWSE of the Republic of China and uniformly assigned by

TWSE.

(6) NoMDEntries: nested loop number

The value of this field = '0' if the transmission record is sent for ending the transmission.

A.MDEntryType : data category. When Tag 268 is not equal to '0', this is a necessary field.

0 =Bid

Best bid price for buying individual common stocks through auction at close.

1 =Offer

Best offer for selling of individual common stocks through auction at close.

4 = Price at opening

5 = Price at close

Price of the last stock trade of the day.

7 = Highest trading price

8 = Lowest trading price

B =statistics on completed transactions

B.MDEntryPx: price

When Tag 269= 'B', this field will not be sent.

C.NoInstrAttrib: statistics on transaction types

When Tag 269='B', use this loop.

(A) InstrAttribType: type of transactions

101= transaction amount

Include the cumulative amount of transactions of related stock trade.

102=transaction volume

Include the cumulative volume of transactions of related stock trade.

103=transaction record

Include the cumulative record of transactions of related stocks.

(B) InstrAttribValue: data content corresponding to the statistics of transactions

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	WS1 WS2
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
48	SecurityID	String	copy	
22	SecurityIDSource	String	constant	8
268	NoMDEntries	Length	copy	
269	MDEntryType	String	copy	
270	MDEntryPx	String	delta	
870	NoInstrAttrib	Length	delta	
871	InstrAttribType	UInt32	copy	
872	InstrAttribValue	String	delta	
<i>Standard Trailer</i>				

8. Statistics of general trade of individual common stocks  
at TWSE (WT1)

FIX message

Tag	Field Name		Req	Description												
	<i>Standard Header</i>		Y	MsgType= message type  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>W</td> <td>Market Data Snapshot (Full Refresh)</td> </tr> </tbody> </table>	value	meaning	W	Market Data Snapshot (Full Refresh)								
value	meaning															
W	Market Data Snapshot (Full Refresh)															
1180	ApplID		Y	Application message type  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>WT1</td> <td>Statistics of general trade of individual common stocks at TWSE</td> </tr> </tbody> </table>	value	meaning	WT1	Statistics of general trade of individual common stocks at TWSE								
value	meaning															
WT1	Statistics of general trade of individual common stocks at TWSE															
1181	ApplSeqNum		Y	application message S/N												
1350	ApplLastSeqNum		N	transmission record												
273	MDEntryTime		N	time of entry												
268	NoMDEntries		Y	nested loop number												
→	269	MDEntryType	Y	Type of trade of the underlying instruments  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>B1</td> <td>Overall trade at TWSE</td> </tr> <tr> <td>B2</td> <td>Fund trade</td> </tr> <tr> <td>B3</td> <td>Stock trade</td> </tr> <tr> <td>B4</td> <td>Call warrant trade</td> </tr> <tr> <td>B5</td> <td>Put warrant trade</td> </tr> </tbody> </table>	value	meaning	B1	Overall trade at TWSE	B2	Fund trade	B3	Stock trade	B4	Call warrant trade	B5	Put warrant trade
value	meaning															
B1	Overall trade at TWSE															
B2	Fund trade															
B3	Stock trade															
B4	Call warrant trade															
B5	Put warrant trade															
→	870	NoInstrAttrib	N	statistics of trade on underlying instruments												
→	→	871	InstrAttribType	N	Statistics of transaction types  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Transaction amount</td> </tr> <tr> <td>102</td> <td>Transaction volume</td> </tr> <tr> <td>103</td> <td>Transaction record</td> </tr> </tbody> </table>	value	meaning	101	Transaction amount	102	Transaction volume	103	Transaction record			
value	meaning															
101	Transaction amount															
102	Transaction volume															
103	Transaction record															
→	→	872	InstrAttribValue	N	Data content of completed transactions											
	<i>Standard Trailer</i>		Y													

- (1) ApplID: type of application message  
Statistics of general trade of individual common stocks at TWSE.
- (2) ApplSeqNum: application message S/N  
Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.
- (3) ApplLastSeqNum: transmission record  
At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.
- (4) MDEntryTime: time of entry  
The format is HH:MM:SS  
Special value: 99:99:99 (Tag 1180 = WT1, “statistics on transactions at close”)  
TWSE keeps statistics of real-time trade of different instruments at different points of time from the opening to the close of the market. Some of the trade orders are still in process of matching at close of the market. Statistics of trade at close will cover the complete transactions of all matches and the time field will be displayed at special value of 99:99:99.
- (5) NoMDEntries: nested loop number, the value of this field is default at “5”.  
The value of this field= ‘0’ at completed transmission (transaction record).
  - A. MDEntryType: statistics on the transactions of instruments by type. When Tag 268 is not equal to ‘0’, this field is necessary.
  - B1=Statistics of overall transactions in market  
Statistics of overall transactions in market and the underlying instruments include all securities traded at TWSE.

B2=Fund trade

The statistics of transactions of underlying instruments of funds include beneficiary certificates, ETF, REAT, financial asset securitized instruments, and REIT.

B3=Stock trade

The statistics of transactions of underlying instruments covers common stocks.

B4=Call warrant trade

The statistics of transactions of underlying instruments include domestic securities, or call warrants of index and overseas securities or call warrant of index.

B5=Put warrant trade

The statistics of transactions of underlying instruments include domestic securities, or put warrants of index and overseas securities or put warrant of index.

B. NoInstrAttrib: types of transactions of all underlying instruments, the value of this field is fixed at '3'.

(A) InstrAttribType: statistics of transaction by type

101= transaction amount

Cumulative amount of transactions.

102= transaction volume

Cumulative volume of transactions, in trading unit.

103=transaction record

Cumulative record of transactions

(B) InstrAttribValue: data content corresponding to the statistics of transactions

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	WT1
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
273	MDEntryTime	String	tail	
268	NoMDEntries	Length	default	5
269	MDEntryType	String	copy	
870	NoInstrAttrib	Length	default	3
871	InstrAttribType	UInt32	copy	
872	InstrAttribValue	UInt64	delta	
<i>Standard Trailer</i>				



9.

Statistics of Fixed Price/after closing trade at TWSE

(WT2/WT3/WT4)

FIX message

Tag	Field Name		Req	Description
	<i>Standard Header</i>		Y	MsgType= message type <hr/> <b>value</b> <b>meaning</b> W        Market Data Snapshot (Full Refresh)
1180	ApplID		Y	Application message type <hr/> <b>value</b> <b>meaning</b> WT2        statistics of fixed-price trade at TWSE WT3        statistics of trade after closing at TWSE (regular trade + fixed-price trade + odd lot trade) WT4        statistics of trade after closing at TWSE (regular trade + fixed-price trade + odd lot trade + broad lot trade)
1181	ApplSeqNum		Y	application messag S/N
1350	ApplLastSeqNum		N	transmission record
273	MDEntryTime		N	Entry time
268	NoMDEntries		Y	nested loop number
→	269	MDEntryType	Y	statistics on type of trade <hr/> <b>value</b> <b>meaning</b> B1        statistics of overall transactions in market
→	870	NoInstrAttrib	N	The transactions of underlying instruments
→	→	871	InstrAttribType	N Statistics of transaction types <hr/> <b>value</b> <b>meaning</b>

					101	transaction amount
					102	transaction volume
					103	transaction record
→	→	872	InstrAttri bValue	N	Data content of completed transactions	
	<i>Standard Trailer</i>			Y		

(1) ApplID: type of application message

WT2= statistics of fixed-price trade at TWSE

WT3= statistics of trade after closing at TWSE (regular trade + fixed-price trade + odd lot trade)

WT4= statistics of trade after closing at TWSE (regular trade + fixed-price trade + odd lot trade + broad lot trade)

(2) ApplSeqNum: application message S/N

Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(3) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.

(4) MDEntryTime: time of entry

The format is HH:MM:SS.

(5) NoMDEntries: nested loop number, the value of this field is fixed at ‘1’.

The value of this field= ‘0’ at completed transmission (transaction record).

A.MDEntryType: statistics on the transactions of instruments by type. When Tag 268 is not equal to ‘0’, this field is necessary.

B1= Statistics of overall transactions in market

Statistics of overall transactions in market and the underlying instruments include all securities traded at TWSE.

B. NoInstrAttrib: types of transactions of all underlying instruments, the value of this field is fixed at ‘3’.

(A) InstrAttribType: statistics of transaction by type

101= transaction amount

102= transaction volume

Tag 1180 = WT2: traded units

Tag 1180 = WT3 or WT4: volume of shares traded

103=transaction record

(B) InstrAttribValue: data content corresponding to the statistics of transactions

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	WT2 WT3 WT4
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
273	MDEntryTime	String	tail	
268	NoMDEntries	Length	default	1
269	MDEntryType	String	default	1
870	NoInstrAttrib	Length	default	3
871	InstrAttribType	UInt32	copy	
872	InstrAttribValue	UInt64	delta	
<i>Standard Trailer</i>				

10. Statistics of general Taiex index trade at TWSE  
(WI1/WI2/WI3)

FIX message

Tag	Field Name		Req	Description												
	<i>Standard Header</i>		Y	MsgType= message type  <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>W</td> <td>Market Snapshot</td> <td>Data (Full Refresh)</td> </tr> </tbody> </table>	value	meaning		W	Market Snapshot	Data (Full Refresh)						
value	meaning															
W	Market Snapshot	Data (Full Refresh)														
1180	ApplID		Y	Application message type  <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>WI1</td> <td>TWSE Taiwan index</td> <td>Taiwan</td> </tr> <tr> <td>WI2</td> <td>TWSE Taiwan new index</td> <td></td> </tr> <tr> <td>WI3</td> <td>TWSE Return Index</td> <td></td> </tr> </tbody> </table>	value	meaning		WI1	TWSE Taiwan index	Taiwan	WI2	TWSE Taiwan new index		WI3	TWSE Return Index	
value	meaning															
WI1	TWSE Taiwan index	Taiwan														
WI2	TWSE Taiwan new index															
WI3	TWSE Return Index															
1181	ApplSeqNum		Y	application message S/N												
1350	ApplLastSeqNum		N	transmission record												
273	MDEntryTime		N	Entry time												
268	NoMDEntries		Y	Entry number												
→	269	MDEntryType	Y	Index code  Refer to Appendix 3 for the codes												
→	270	MDEntryPx	N	Index value												
	<i>Standard Trailer</i>		Y													

(1) ApplID: type of application message

WI1= TWSE Taiwan index

WI2= TWSE Taiwan new index

WI3= TWSE Return Index

(2) ApplSeqNum: application message S/N

Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(3) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was

completely received. This field will not be sent if it is not a message of ending.

(4) MDEntryTime: time of entry

The format is HH:MM:SS

- A. Special value: 00:00:00 (Tag 1180 = WI1 or WI2, meaning “index at close of the previous day”)
- B. Special value: 99:99:99 (Tag 1180 = WI1 or WI2, meaning the “index at close”)

TWSE keeps statistics of real-time trade of index at different points of real-time (WI1, WI2) from the opening to the close of the market. Some of the trade orders are still in process of matching at close of the market. Statistics of trade at close will cover the complete transactions of all matches and the time field will be displayed at special value of 99:99:99.

Return index (WI3), will be announced at close of each trading day.

(5) NoMDEntries: nested loop number

The value of this field= ‘0’ at completed transmission (transaction record).

- A. MDEntryType: index code, when Tag 268 is not equal to ‘0’, this field is necessary. For index code, please refer to the Appendix.
- B. MDEntryPx: Index value

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	W1 W2 W3
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
273	MDEntryTime	String	tail	
268	NoMDEntries	Length	copy	
269	MDEntryType	String	copy	
270	MDEntryPx	String	delta	
<i>Standard Trailer</i>				

11.

## Statistics of general consignment trade at TWSE (WO1)

## FIX message

Tag	Field Name		Req	Description
	<i>Standard Header</i>		Y	MsgType= message type  <b>value    meaning</b> W    Market Data Snapshot (Full Refresh)
1180	ApplID		Y	Application message type  <b>value    meaning</b> WO1    Statistics        of general consignment trade at TWSE
1181	ApplSeqNum		Y	application message S/N
1350	ApplLastSeqNum		N	transmission record
273	MDEntryTime		N	time of entry
268	NoMDEntries		Y	Nested loop number
→	269	MDEntryType	Y	Type of consignment trade of underlying instruments  <b>value    meaning</b> 101    Overall consignment trade at TWSE 102    Consignment trade of fund 103    Consignment trade of stocks 104    Consignment trade of call warrants 105    Consignment trade of put warrants
→	870	NoInstrAttrib	N	Nested loop number
→	→	871	InstrAttribType	N statistics of consignment trade on underlying instruments by type  <b>value    meaning</b>

					101 Total buy 102 Total sell 103 Rise Stop purchase 104 Rise Stop Sales 105 Fall Stop Purchase 106 Fall Stop Sales						
→	→	1177	NoOfSecSizes	N	Nested loop number						
→	→	→	1178	MDSecSizeType	Consignment trade value by category <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Consignment trade volume</td> </tr> <tr> <td>102</td> <td>Consignment trade record</td> </tr> </tbody> </table>	value	meaning	101	Consignment trade volume	102	Consignment trade record
value	meaning										
101	Consignment trade volume										
102	Consignment trade record										
→	→	→	1179	MDSecSize	Value						
		<i>Standard Trailer</i>			Y						

(1) ApplID: application message type

WO1= statistics of general consignment trade at TWSE.

(2) ApplSeqNum: application message S/N

Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(3) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.

(4) MDEntryTime: time of entry

The format is HH:MM:SS.

(5) NoMDEntries: nested loop number. The value of this field is default at ‘5’.

The value of this field = ‘0’ if the transmission record is sent for ending the transmission.



A.MDEntryType: consignment trade category. When Tag 268 is not equal to '0', this is a necessary field.

101=Overall consignment trade at TWSE

The statistics of all consignment trade of underlying instruments in market, including the consignment trade of all securities.

102= Statistics of consignment trade of funds

The statistics of consignment trade of underlying funds, including beneficiary certificates, ETF, REAT, financial asset securitized securities, and REIT.

103=Statistics of consignment trade of stocks

The statistics of consignment trade of common stocks.

104=Statistics of consignment trade of call warrants

The statistics of consignment trade of call warrants, including call warrants with domestic stocks and indexes as underlying instruments and overseas stocks and indexes as underlying instruments.

105=Statistics of consignment trade of put warrants

The statistics of consignment trade of put warrants, including put warrants with domestic stocks and indexes as underlying instruments and overseas stocks and indexes as underlying instruments.

B.NoInstrAttrib: nested loop number. The value of this field is default at '6'.

(A)InstrAttribType: statistics of all consignment trade by type.

101=Total buy

102=Total sell

103=Rise Stop Purchase

104=Rise Stop Sales

105=Fall Stop Purchase

106=Fall Stop Sales

(B)NoOfSecSizes: nested loop number. The value of this field is default at '2'.

a.MDSecSizeType: statistics of the size of consignment trade by type

101=cumulative volume of consignment trade

102=cumulative transaction record of consignment trade

b.MDSecSize: size of trade

When Tag1178= '101', the value of this field is the trading units.

## FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	WO1
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
273	MDEntryTime	String	tail	
268	NoMDEntries	Length	default	5
269	MDEntryType	String	copy	
870	NoInstrAttrib	Length	default	6
871	InstrAttribType	UInt32	copy	
1177	NoOfSecSizes	Length	default	2
1178	MDSecSizeType	UInt32	copy	
1179	MDSecSize	UInt64	delta	
<i>Standard Trailer</i>				

12.

## Statistics of fixed-price consignment trade at TWSE

(WO2)

## FIX message

Tag	Field Name		Req	Description																		
	<i>Standard Header</i>		Y	MsgType= message type <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>W</td> <td>Market Snapshot</td> <td>Data (Full Refresh)</td> </tr> </tbody> </table>	value	meaning		W	Market Snapshot	Data (Full Refresh)												
value	meaning																					
W	Market Snapshot	Data (Full Refresh)																				
1180	ApplID		Y	Application message type <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>WO2</td> <td>Statistics of fixed-price consignment trade at TWSE</td> <td></td> </tr> </tbody> </table>	value	meaning		WO2	Statistics of fixed-price consignment trade at TWSE													
value	meaning																					
WO2	Statistics of fixed-price consignment trade at TWSE																					
1181	ApplSeqNum		Y	application message S/N																		
1350	ApplLastSeqNum		N	transmission record																		
273	MDEntryTime		N	time of entry																		
268	NoMDEntries		Y	Nested loop number																		
→	269	MDEntryType	Y	Type of consignment trade of underlying instruments <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Overall consignment trade at TWSE</td> <td></td> </tr> <tr> <td>102</td> <td>Consignment trade of funds</td> <td></td> </tr> </tbody> </table>	value	meaning		101	Overall consignment trade at TWSE		102	Consignment trade of funds										
value	meaning																					
101	Overall consignment trade at TWSE																					
102	Consignment trade of funds																					
→	870	NoInstrAttrib	N	Nested loop number																		
→	→	871	InstrAttribType	N statistics of consignment trade on underlying instruments by type <table border="1"> <thead> <tr> <th>value</th> <th colspan="2">meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Total buy</td> <td></td> </tr> <tr> <td>102</td> <td>Total sell</td> <td></td> </tr> <tr> <td>103</td> <td>Rise Purchase</td> <td>Stop</td> </tr> <tr> <td>104</td> <td>Rise Stop Sales</td> <td></td> </tr> <tr> <td>105</td> <td>Fall</td> <td>Stop</td> </tr> </tbody> </table>	value	meaning		101	Total buy		102	Total sell		103	Rise Purchase	Stop	104	Rise Stop Sales		105	Fall	Stop
value	meaning																					
101	Total buy																					
102	Total sell																					
103	Rise Purchase	Stop																				
104	Rise Stop Sales																					
105	Fall	Stop																				

					Purchase 106 Fall Stop Sales						
→	→	1177	NoOfSecSiz es	N	Nested loop number						
→	→	→	1178	MDSec SizeTy pe	Consignment trade value by category  <table border="1"> <thead> <tr> <th>value</th> <th>meaning</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Consignment trade volume</td> </tr> <tr> <td>102</td> <td>Consignment trade record</td> </tr> </tbody> </table>	value	meaning	101	Consignment trade volume	102	Consignment trade record
value	meaning										
101	Consignment trade volume										
102	Consignment trade record										
→	→	→	1179	MDSec Size	Value						
	<i>Standard Trailer</i>			Y							

(1) ApplID: application message type

Statistics of fixed-price consignment trade at TWSE.

(2) ApplSeqNum: application message S/N

Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.

(3) ApplLastSeqNum: transmission record

At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.

(4) MDEntryTime: time of entry

The format is HH:MM:SS

(5) NoMDEntries: nested loop number. The value of this field is default at ‘2’.

The value of this field = ‘0’ if the transmission record is sent for ending the transmission.

A.MDEntryType: Consignment trade category. When Tag 268 is not equal to ‘0’, this is a necessary field.

101= Overall consignment trade at TWSE

The statistics of all consignment trade of underlying instruments in market, including the consignment trade of all securities.

102= Statistics of consignment trade of funds

The statistics of consignment trade of underlying funds, including beneficiary certificates, ETF, REAT, financial asset securitized securities, and REIT.

B.NoInstrAttrib: nested loop number. The value of this field is default at '6'.

(A) InstrAttribType: statistics of all consignment trade by

type

101= Total buy

102= Total sell

103= Rise Stop Purchase

104= Rise Stop Sales

105= Fall Stop Purchase

106= Fall Stop Sales

(B) NoOfSecSizes: nested loop number. The value of this field is default at '2'.

a.MDSecSizeType: statistics of the size of consignment trade by type

101= cumulative volume of consignment trade

102= cumulative transaction record of consignment trade

b.MDSecSize: size of trade

When Tag1178= '101', the value of this field is the trading units.

### FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	WO2
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
273	MDEntryTime	String	copy	
268	NoMDEntries	Length	default	2
269	MDEntryType	String	copy	
870	NoInstrAttrib	Length	default	6
871	InstrAttribType	UInt32	copy	
1177	NoOfSecSizes	Length	default	2
1178	MDSecSizeType	UInt32	copy	
1179	MDSecSize	UInt64	delta	
<i>Standard Trailer</i>				

13. TWSE announcements (B1/B2/B3)

FIX message

Tag	Field Name	Req	Description
	<i>Standard Header</i>	Y	MsgType= message type <b>Value meaning</b> B News
1180	ApplID	Y	Application message type <b>value meaning</b> B1 TWSE general announcement B2 TWSE dealer hedge accounts consignment trade announcement B3 TWSE emergency announcement
1181	ApplSeqNum	Y	application message S/N
1350	ApplLastSeqNum	N	transmission record
148	Headline	Y	Announcement headline
33	NoLinesOfText	Y	Lines of text
→	58   Text	Y	text
	<i>Standard Trailer</i>	Y	

- (5) ApplID: application message type  
 B1= TWSE general announcement  
 B2= TWSE dealer hedge accounts consignment trade announcement  
 B3= TWSE emergency announcement
- (6) ApplSeqNum: application message S/N  
 Codification starts with 1, the code of “99999999” means the transmission of all application messages ended.
- (7) ApplLastSeqNum: transmission record  
 At the end of the transmission, the record of transmission will be sent to the user for checking if the information sent was completely received. This field will not be sent if it is not a message of ending.



(8) Headline: announcement headline

Tag 1180='B1', field value= 'general announcement'.

Tag 1180='B2', field value = 'TWSE dealer hedge accounts consignment trade announcement'.

Tag 1180='B3', field value = 'TWSE emergency announcement'.

(9) NoLinesOfText: number of lines of the announcement text, one line is fed at one time, and the value of this field is default at '1'.

(10) Text: the text message content

FAST Template

Tag	Field Name	Field Type	Field Encoding	Remarks
<i>Standard Header</i>				
1180	ApplID	String	constant	B1 B2 B3
1181	ApplSeqNum	UInt32	-	
1350	ApplLastSeqNum	UInt32	-	
148	Headline	String	constant	“general announcement” “TWSE dealer hedge accounts consignment trade announcement” “TWSE emergency announcement”
33	NoLinesOfText	Length	default	1
58	Text	String	-	
<i>Standard Trailer</i>				

## Seven.

### Appendixes

#### I. Alternate site backup plan

##### 1. Situations for alternate site backup

In case of abnormal functioning of the server at TWSE during trading hours, all trading systems will be switched to the backup center at an alternate site. This is the time during which the two trading centers switching the information network will be closed for the entry of consignment trade until the system at the alternate backup site is activated for operation. Users should switch to the alternate backup center for receiving market information. After successful connection with the alternate backup center, the securities dealers should confirm the proper functioning of the file transmission system for placing orders and sending information on transactions before proceeding to trade.

##### 2. Notes to the operation process alternate site backup data recovery

- (1) TWSE may decide to switch all transactions to the backup center at an alternate site in case of major incident, and shall announce the time for resumption of trade.
- (2) TWSE adopts the real-time filing mode to store all trade data at the backup center at an alternate site. In activating the backup mechanism, follow the instructions for rebuilding the files at the backup center for resumption of trade. There may be discrepancy between the data at the server of the main site and the backup site; the data at the backup site shall be valid.
- (3) To ensure all users can obtain correct and valid data of the day, TWSE will regroup all FIX/FAST

messages and application messages after relocating to the alternate backup site. When DAP-Realtime system is activated, all valid data of the messages will be recoded from 1 and resent again. DAP-Rebuild adopts the same method for data regrouping. The users are requested to check the update, or rebuild the database to ensure the content of data and sequence are synchronized with TWSE.

## **II. Industry Category Code Table, Stock Codification Rules**

1. The inception of the new coding rules of securities at TWSE makes the identification of industry by just reading the first two digits of the code impossible. As such, the industry category all common stocks and subordinated preferred shares of the industries shall be identified by the fields defined in this document.
2. The aforementioned preferred shares shall include preferred shares with subscription warrants and equity payment receipts for subscription, and equity swap certificates. Your attention is strongly advised because this field is just the code for the identification of industry category. Whether or not specific security is preferred share or preferred shares with subscription warrants shall be determined under the original coding rules of securities.
3. Other non-industry securities, including beneficiary certificates (closed-end funds), call/put warrants, depository receipts, foreign stocks, bonds from the exercise of bonds featuring subscription rights, convertible bonds, and corporate bonds with subscription warrants. The value of this field is “00”. Users are advised to determine the types of securities by referring to the original coding rules of securities.
4. Treasury or government bonds shall be displayed as before. The value of this field is the 1<sup>st</sup> to the 4<sup>th</sup> digits of the security code.

<b>Industry Category Code</b>	<b>Industry Category</b>	<b>Industry Category Code</b>	<b>Industry Category</b>	<b>Industry Category Code</b>	<b>Industry Category</b>
01	Cement Industry	12	Auto Industry	23	Oil, Gas and Electricity Industry
02	Food Industry	14	Construction Materials & Construction	24	Semiconductor Industry
03	Plastic Industry	15	Sea Transport Industry	25	Computer & Peripheral Equipment Industry
04	Textile & Fiber	16	Tourism Industry	26	Optoelectronic Industry
05	Electrical Engineering & Machinery	17	Finance & Insurance	27	Communications and Internet Industry
06	Appliance & Cable	18	Wholesale & Retailing	28	Electronic Parts/ Components Industry
08	Glass & Ceramics	19	Miscellaneous	29	Electronic Products Distribution Industry
09	Papermaking Industry	20	Other	30	Information Service Industry
10	Steel & Iron Industry	21	Chemical Industry	31	Other Electronic Industry
11	Rubber Industry	22	Biotechnology & Medical Care		

## Stock Codification Rules

(I) A stock code is expressed in ASCII code, 6 bytes:

Stock type	Stock code					
	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6
Beneficiary Certificates <sup>(note 1)</sup>	0	0	0   4	0   9	0   9	0   9
Exchange Traded Fund (ETF) (note 1)	0	0	5   9	0   9	0   9	0   9
Real Estate Asset <b>Trust</b> Beneficiary Securities			0	0	0	P
Financial Asset Securitization Beneficiary Securities	0	1	 9	 9	 9	S
Real Estate Investment Trust Beneficiary Securities						T
Call Warrant with domestic securities or index as underlying assets.	0	3   8	0   9	0   9	0   9	0   9
Put Warrant with domestic securities or index as underlying assets.						P
Call Warrant with foreign securities or indexes as underlying assets						F
Put Warrant with foreign securities or indexes as underlying assets	0	3   8	0   9	0   9	0   9	Q
“Lower Limit Call Warrant” (Bull Contract) with domestic securities or indexes as underlying assets						C
“Upper Limit Put Warrant” (Bear Contract) with domestic securities or indexes as underlying assets						B

Common stocks	1   9	0   9	0   9	0   9		
Depository Receipt <sup>(note 1)</sup>	9	1	 9	 9	0   9	0   9
Foreign Stocks	9	3   4	0   9	0   9		
General Preferred Stocks	Original code				A   E	
Preferred Stocks with Warrants	Original code				G	A   C
Debentures with Warrants	Original code				G	D   L
Subscription warrants	Original code				G	1   9
Cooperate Bonds of Performed Debentures with Warrants	Original code				F	1   9
New Share Entitlement Certificates, New Stock Right Certificates, Stock Share Payment Certificates	Original code				L   Z	
Convertible Bonds	Original code				1   9	Void, 0   9
Exchangeable Corporate Bonds, Exchangeable Financial Bonds	Original code				0	1   9



Government Bonds	A	0	0	0	0	0
	C					
	D	9	9	9	9	9
Foreign Securities	F	—	—	—	—	—

Note 1: The previous 6-digit principle of codification for closed-end fund certificates, ETF, TDR is applicable to securities listed in the exchange after December 15 2009. Stock code previously assigned is still in 4 digits. Stock code defined as 9201~9299 under TDR remains unchanged.

Note 2: The stock code starting with 09 is preserved.

(II) Government Bond Coding Rules (6 codes):

□□□□□□

1 2 3 4 5 6

1. Code 1 is a letter: A- Central Government Bond; C-Taipei City Government Bond; D-Kaohsiung City Government Bond
2. Codes 2-3 represent year, e.g. 93, 94, 95, etc.
3. Code 4 represents bond type.
4. Codes 5-6 represent period, e.g. 01, 02, 03, etc.

### III. Stock Category Code Table

Special attributes of securities that cannot be determined directly from stock code:

<b>Code</b>	<b>Meaning</b>
W1	Call warrant, proportionally issued (the amount of original conversion target shares is 1000 upon issue)
W2	Call warrant, un-proportionally issued (the amount of original conversion target shares is not 1000 upon issue)
W3	Put warrant, proportionally issued (the amount of original conversion target shares is 1000 upon issue)
W4	Put warrant, un-proportionally issued (the amount of original conversion target shares is not 1000 upon issue)
BS	Securities stocks of domestic listed companies
FB	Stocks of domestic listed banks
Blank	Listed securities of other domestic companies
RR	Listed securities of other foreign companies
RS	Securities stocks of foreign listed companies
RB	Stocks of listed foreign banks

#### IV. Index Code Table

For information on codes, visit  
<http://mops.twse.com.tw/mops/web/t95sb06>

Code	Index code	Index name in Chinese	Abbreviation in Chinese	Index name in English	Abbreviation in English
1.	IX0005	臺灣發達指數	發達指數	FTSE TWSE Taiwan Eight Industries Index	8 Industries
2.	IX0006	臺灣高股息指數	高股息指數	FTSE TWSE Taiwan Dividend+ Index	Dividend+
3.	IX0003	臺灣中型 100 指數	中 100 指數	FTSE TWSE Taiwan Mid-Cap 100 Index	Mid-Cap 100
4.	IX0008	未含電子股指數	非電指數	Non-Electronics Sub-index	Non-Elec
5.	IX0007	未含金融保險股指數	非金指數	Non-Finance Sub-index	Non-Fin
6.	IX0009	未含金融電子股指數	非金電指數	Non-Finance Non-Electronics Sub-index	Non-Fin/Elec
7.	IX0001	發行量加權股價指數	臺股指數	TWSE Capitalization Weighted Stock Index	TAIEX
8.	IX0002	臺灣 50 指數	臺 50 指數	FTSE TWSE Taiwan 50 Index	Taiwan 50
9.	IX0004	臺灣資訊科技指數	科技指數	FTSE TWSE Taiwan Technology Index	Technology
10.	IX0013	水泥窯製類指數	水泥窯製類	Cement and Ceramic	Cem/Cera
11.	IX0010	水泥類指數	水泥類	Cement	Cement
12.	IX0019	化學生技醫療類指數	化學生醫類	Chemical, Biotechnology	Chem/Bio/Med

Code	Index code	Index name in Chinese	Abbreviation in Chinese	Index name in English	Abbreviation in English
				and Medical Care	
13.	IX0017	電機機械類指數	電機類	Electric Machinery	Elec-Machinery
14.	IX0018	電器電纜類指數	電器電纜類	Electrical and Cable	Elec/Cable
15.	IX0015	機電類指數	機電類	Electrical	Electrical
16.	IX0011	食品類指數	食品類	Food	Food
17.	IX0014	塑膠化工類指數	塑化類	Plastic and Chemical	Plas/Chem
18.	IX0012	塑膠類指數	塑膠類	Plastic	Plastic
19.	IX0016	紡織纖維類指數	紡織類	Textile	Textile
20.	IX0026	汽車類指數	汽車類	Automobile	Automobile
21.	IX0021	生技醫療類指數	生醫類	Biotechnology and Medical Care	Bio/Med
22.	IX0020	化學類指數	化學類	Chemical	Chemical
23.	IX0029	電腦及週邊設備類指數	電腦週邊類	Computer and Peripheral Equipment	Com-Equip
24.	IX0027	電子類指數	電子類	Electronics	Electronics
25.	IX0022	玻璃陶瓷類指數	玻璃陶瓷類	Glass and Ceramic	Glass/Cera
26.	IX0024	鋼鐵類指數	鋼鐵類	Iron and Steel	Iron/Steel
27.	IX0023	造紙類指數	造紙類	Paper and Pulp	Paper/Pulp
28.	IX0025	橡膠類指數	橡膠類	Rubber	Rubber
29.	IX0028	半導體類指數	半導體類	Semiconductor	Semiconductor
30.	IX0036	建材營造類指數	營建類	Building Material and Construction	Building
31.	IX0032	電子零組件類指數	電零類	Electronic Parts/Components	Elec-Comp
32.	IX0033	電子通路類指數	電通類	Electronic Products	Elec-Prod-Dist

Code	Index code	Index name in Chinese	Abbreviation in Chinese	Index name in English	Abbreviation in English
				Distribution	
33.	IX0039	金融保險類指數	金融類	Finance and Insurance	Finance
34.	IX0034	資訊服務類指數	資服類	Information Service	Info Service
35.	IX0031	通信網路類指數	網通類	Communications and Internet	Internet
36.	IX0030	光電類指數	光電類	Optoelectronic	Optoelectronic
37.	IX0035	其他電子類指數	其他電子類	Other Electronic	Other-Elec
38.	IX0037	航運類指數	航運類	Shipping and Transportation	Shipping
39.	IX0038	觀光類指數	觀光類	Tourism	Tourism
40.	IX0041	油電燃氣類指數	油電燃氣類	Oil, Gas and Electricity	Oil/Gas/Elec
41.	IX0042	其他類指數	其他類	Other	Other
42.	IX0040	貿易百貨類指數	貿易百貨類	Trading and Consumers' Goods	Trading
43.	IX0061	臺灣就業創造99指數	臺灣就業99指數	TWSE RA Taiwan Employment Creation 99 Index	EMP 99

## V. Return Index Code Table

Code	Index code	Return Index Name in Chinese	Abbreviation in Chinese
1.	IR0001	發行量加權股價報酬指數	臺股一報
2.	IR0002	臺灣 50 報酬指數	臺 50一報
3.	IR0003	臺灣中型 100 報酬指數	中 100一報
4.	IR0004	臺灣資訊科技報酬指數	資科一報
5.	IR0005	臺灣發達報酬指數	發達一報
6.	IR0006	臺灣高股息報酬指數	高股息一報
7.	IR0009	未含金融電子股報酬指數	非金電一報
8.	IR0010	水泥工業	水泥類一報
9.	IR0011	食品工業	食品類一報
10.	IR0012	塑膠工業	塑膠類一報
11.	IR0016	紡織纖維	紡織類一報
12.	IR0017	電機機械	電機類一報
13.	IR0018	電器電纜	電器纜一報
14.	IR0019	化學生技醫療指數	化學醫一報
15.	IR0020	化學工業	化學類一報
16.	IR0021	生技醫療	生技醫一報
17.	IR0022	玻璃陶瓷	玻璃陶一報
18.	IR0023	造紙工業	造紙類一報
19.	IR0024	鋼鐵工業	鋼鐵類一報
20.	IR0025	橡膠工業	橡膠類一報
21.	IR0026	汽車工業	汽車類一報
22.	IR0027	電子工業指數	電子類一報
23.	IR0028	半導體	半導體一報

Code	Index code	Return Index Name in Chinese	Abbreviation in Chinese
24.	IR0029	電腦及週邊設備	電腦週一報
25.	IR0030	光電類報酬指數	光電類一報
26.	IR0031	通信網路類報酬指數	網通類一報
27.	IR0032	電子零組件類報酬指數	電子零一報
28.	IR0033	電子通路類報酬指數	電通路一報
29.	IR0034	資訊服務類報酬指數	資服類一報
30.	IR0035	其他電子類報酬指數	其他電一報
31.	IR0036	建材營造類報酬指數	營建類一報
32.	IR0037	航運類報酬指數	航運類一報
33.	IR0038	觀光事業類報酬指數	觀光類一報
34.	IR0039	金融保險類報酬指數	金保類一報
35.	IR0040	貿易百貨類報酬指數	貿易百一報
36.	IR0041	油電燃氣類報酬指數	油電燃一報
37.	IR0042	其他類報酬指數	其他類一報
38.	IR0061	TWSE RA Taiwan Employment Creation 99 Return Index	Taiwan RAFI® EMP 99 Return Index
39.	IR0064	TWSE RA Taiwan Corporate Operation 101 Return Index	Taiwan RAFI® CO101 Return Index

## VI. Newly Compiled Index Code Table

Index codes are represented by ASCII in length of 6 bytes.

Index Code	Index	Index Code	Index
TW50	Taiwan 50 Index	TWMC	Taiwan Mid 100 Index
TWIT	Taiwan Technology Index	TWEI	Taiwan Eight Industries Index
TWDP	Taiwan Dividend + Index	EMP99	Taiwan Employment 99 Index
CO101	Taiwan RAFI(r) CO101 Index		



## VII. TWSE FIX/FAST message transmission table

### 1. The FIX message types initiated by TWSE-end

Message type MsgType(tag 35)	Message name	Remarks
Management message		
A	Logon	Logon message
0	Heartbeat	Heartbeat message
3	Reject – Session Level	Session reject message
5	Logout	Logout message
V	DAP-RS Request Message	Search Resend Request Message
Y	DAP-RS Reject Message	Search Resend Reject Message
Application message		
d	Security Definition	d1:Basic data of securities at TWSE d2: Full-name of call(put) warrants at TWSE
f	Security Status	f: Status of securities at TWSE
X	Market Data	X1: Real-time Auction Quotes of

	Incremental Refresh	<p>Common Stocks at the 1<sup>st</sup> IP market at TWSE</p> <p>X2: Real-time Auction Quotes of Common Stocks at the 2<sup>nd</sup> IP market at TWSE</p> <p>X3: Information on Fixed-Price Stock Trade at TWSE</p> <p>X4: Information on Real-Time Odd Lot Trade at TWSE</p>
W	Market Data Snapshot (Full Refresh)	<p>WS1: Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade)</p> <p>WS2: Statistics of Securities Trade at TWSE at Close of Market (Regular trade + fixed price trade + odd lot trade + broad lot trade)</p> <p>WT1: Statistics of general trade of individual common stocks at TWSE</p> <p>WT2: Statistics of fixed-price trade at TWSE</p> <p>WT3: Statistics of trade after closing at TWSE (regular trade +</p>

		fixed-price trade + odd lot trade) WT4: Statistics of trade after closing at TWSE (regular trade + fixed-price trade + odd lot trade + broad lot trade) WI1: Statistics of TWSE Taiwan Index WI2: Statistics of TWSE New Taiwan Index WI3: TWSE Return Index WO1: Statistics of general consignment trade at TWSE WO2: Statistics of fixed-price consignment trade at TWSE
B	News	B1: TWSE general announcement B2: TWSE dealer hedge accounts consignment trade announcement B3: TWSE emergency announcement

2. The FIX message types initiated by User-end

Message type MsgType(tag 35)	Message name	Remarks
---------------------------------	--------------	---------

Management message		
A	Logon	Logon message
5	Logout	Logout message

3. TWSE-end transmitted FIX application message fields, transmission time and channel table

DAP-RT system run time: 0730-1730																						
DAP-RB system run time: 0800-1800																						
ID		d1	d2	f1	X1	X2	X3	X4	W S1	W S2	W T1	W T2	W T3	W T4	W I1	W I2	W I3	W O1	W O2	B1	B2	B3
Real-time transmission	time	0800	1430	0800   1700	0900   1330	0900   1330	1430	1425   1430	1440	1705	0900   1330	1430	1440	1705	0900   1330	0900   1330	1440	0900   1330	1400   1430	0800   1700	0800   1700	0800   1700
	channel	RT#3	RT#3	RT#3	RT#1	RT#2	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3	RT#3
Replay	time	real-time	real-time	real-time	1400	1400	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	real-time	
	Channel	RB#3	RB#3	RB#3	RB#1	RB#2	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3	RB#3
Field used Tag #	1180	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	
	1181	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	
	1350	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	
	48	o	o	o	o	o	o	o	o	o												
	22	o	o	o	o	o	o	o	o	o												

DAP-RT system run time: 0730-1730  
DAP-RB system run time: 0800-1800

ID		d 1	d 2	f1	X 1	X 2	X 3	X 4	W S1	W S2	W T 1	W T 2	W T 3	W T 4	W I1	W I2	W I3	W O 1	W O 2	B 1	B 2	B 3
870		○			○	○		○	○	○	○	○	○	○				○	○			
871		○			○	○		○	○	○	○	○	○	○				○	○			
872		○			○	○		○	○	○	○	○	⊙	⊙								
292		○																				
1227		○																				
1151		○																				
55		○																				
1148		⊙																				
1149		⊙																				
1150		⊙																				
561		○																				
15		○																				
58			○																	○	○	○
107				○																		
60				○	○	○																
273					⊙	⊙	○	○			⊙	○	○	○	⊙	⊙	○	⊙	○			
31					○	○	○	○														
1020					○	○	○	○														
14					○	○																
326					○	○																

DAP-RT system run time: 0730-1730																							
DAP-RB system run time: 0800-1800																							
ID		d	d	f1	X	X	X	X	W	W	W	W	W	W	W	W	W	W	W	B	B	B	
		1	2		1	2	3	4	S1	S2	T	T	T	T	I1	I2	I3	O	O	1	2	3	
											1	2	3	4				1	2				
	1022				○	○		○															
	264				○	○		○															
	268				○	○		○	○	○	○	○	○	○	○	○	○	○	○	○			
	269				○	○		○	○	○	○	○	○	○	○	○	○	○	○	○			
	279				○	○		○															
	270				○	○		○							○	○	○						
	1177																	○	○				
	1178																	○	○				
	1179																	○	○				
	148																			○	○	○	
	33																			○	○	○	

© Special definitions

■ FIX4.4 Undefined standard, but defined as the updated version of FIX5.0 standard.

■ FIX Undefined standard; the field will be defined by TWSE.