



TEMENOS™

Bloomberg Pricing Interface

User Guide

Version 1.1

(GR0100010)



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Overview of this guide

The purpose of this document is to give the User a better understanding of the functioning of the Bloomberg Interface. This guide does not explain all the functions of the interface. It concentrates on how it acts as a Price Feed for the Securities module in GLOBUS.

Assumptions

It is assumed that the reader of this guide has knowledge of the following.

- Basic knowledge in UNIX operating systems.
- Fair knowledge in TEMENOS GLOBUS™
- <<Assumptions Specific to the Developments>>



If any of the above assumptions are not met, then get back to the Project Manager Onsite for HELP.

Document Support

*Any queries in any part of this document can be addressed to grid@temenos.com (or) gpack@temenos.com. Refer to the **Contact Back To** address in the Document Detail pane on Page 3 of this Guide for support.*

Scope of this guide

User Reference information of this particular development is the only scope of this guide.



*Installation, Customization Procedures, Release Information, Guidelines for testing, Operation and Migration procedures are **NOT** under the scope of this Document*



This Chapter Includes the Following Sections

CHAPTER 1

Introduction

- q **Document Purpose**
- q **TEMENOS GLOBUS™ MODULES SUPPORTED**
- q **Multi Threading Supported**
- q **Abbreviations used in this Document**



1.1 Document Purpose

This document provides information to the user to understand the different parameter files and their setup.

1.2 TEMENOS GLOBUS™ MODULES SUPPORTED

PRODUCT –SC--SECURITIES

SECURITY.MASTER-Referred as SM in this Document

SEC.TRADE-Referred as ST in this document

1.3 Multi Threading Supported

Not Applicable

1.4 Abbreviations used in this Guide

S – Single Value Field

M – Multi Value Field

AMS – Associated Multi Value Starts Here

AM – Member of Associated Multi Value



AMC – Associated Multi Value Closes Here



CHAPTER 2

Templates, Fields and Description

This Chapter includes the following sections

- q **BPI.PARAMETER**
- q **BPI.INCOMING.PRICES**
- q **BPI.SECID.CONCAT**
- q **Local References that must be added to the Security Master**



2.1 BPI.PARAMETER



<<PARAMETER FILE>>

About This File...

This is the main parameter file for the Bloomberg Interface.

It contains a single record with ID as SECURITIES.

No	Field Name	Length	M / S	Description
0	@ID		S	Only Static Value is SYSTEM
1	UPDATE.CODE	5	<u>S</u>	The update code of a security identifies it for a Bloomberg update. This must be linked to PRICE.UPDATE table. Input is mandatory.
2	CURR.CONVERSION	1	S	Specifies if the updated price should be converted to the currency it is held in, in GLOBUS if it is different from it. Has a value of 'Y' or 'N'. Mandatory input.
3	EXCH.RATE.FIELD	34	S	Specifies the field in the file CURRENCY from where the exchange rate for currency must be taken. Must be no input if the above field is "N". Must be a drop down list with the values REVAL.RATE and MID.REVAL.RATE. Mandatory if the field above is Y.
4	ASSET.TYPE.CODE	3	AMV	The ID of the asset type for which you are specifying the details below. Must be linked to ASSET.TYPE table. Must not be duplicate. There must be a value of DEFAULT which cannot be removed. Mandatory.
5	AT.PR.VAR.PCNT	16	AMV	Percentage of price variance allowed.
6	AT.PR.FREQ.UPD	7	AMV	Frequency of price update. This is a drop down list with 2 values of DAILY and MONTHLY and has a default value of DAILY which can be changed by the user.
7	AT.PR.ORDER	35	AMV	The order of the Bloomberg price fields in which you want the price to be picked up. This has a default value of



				'LAST.PRICE' and can be changed by the user. Must not be a duplicate within the sub value.
8	SUB.ASSET.TYPE	5	AMV	The ID of the sub asset type for which you are specifying the details below. Must be linked to SUB.ASSET.TYPE table. Must not be a duplicate. Must not be duplicated.
9	SAT.PR.VAR.PCNT	16	AMV	Percentage of price variance allowed.
10	SAT.PR.FREQ.UPD	7	AMV	Frequency of price update. This is a drop down list with 2 values of DAILY and MONTHLY and has a default value of DAILY which can be changed by the user.
11	SAT.PR.ORDER	35	AMV	The order of the Bloomberg price fields in which you want the price to be picked up. This has a default value of 'LAST.PRICE' and can be changed by the user but is mandatory. Must not be a duplicate within the sub value.
12 – 17	RESERVED FIELD	35	MV	For future use.
18	LOCAL.REF	35	MV	Client specific fields



TABLE 1 – BPI.PARAMETER

2.2 BPI.INCOMING.PRICES

No	Field Name	Length	M / S	Description
0	@ID	35	S	ID used in the feed
1	SEC.NO	12	S	The ID of the security in GLOBUS.
2	ERR.STATUS	35	S	Error message if any
3	RETURN.CODE	4	S	The return code from Bloomberg for success or error messages.
4	NO.OF.FIELDS	4	S	The number of fields requested and received to be used to get the different values in the reply line.
5	SEC.NAME	35	S	The name of the security.
6	CURRENCY	3	S	The currency of the security from the feed.
7	EXCHANGE.RATE	16	S	A value of 1 if the currency in the feed is



				the same as the currency in GLOBUS for that security and the actual exchange rate if between the two currencies if they are different.
8	LAST.PRICE	16	S	The contents of the last price field for this security in the feed.
9	LAST.UPD.DATE	11	S	The date of the last price update.
10	LAST.UPD.DATE.OR.TIME		S	The time if the last price update was today or the date if it was before today.
11	DATE.OF.FEED	11	S	Date on which this record was created.
12	NO.OF.DAYS.REJECT	3	S	Number of days that the security has been rejected by Bloomberg.
13 – 17	RESERVED.FIELD	35	S	For future use
18	LOCAL.REF	35	MV	Client specific fields. Note: Fields once created and populated cannot be removed by the user.

 TABLE 2 – BPI.INCOMING.PRICES

2.3 BPI.SECID.CONCAT

No	Field Name	Length	M / S	Description
0	BPI.FEED.SECID	35	S	Possible ids will be of type - CUSIP.NO, I.S.I.N., SEDOL.NO, CEDEL.NO, EUROCLEAR.NO, SWISS.NO, MNEMONIC and US.FREE.FORM.ID.
1	GLOBUS.SECID	35	S	Possible ids will be GLOBUS SECURITY.MASTER ids.

 TABLE 3 – BPI.SECID.CONCAT

2.4 Local Reference fields - Security Master



No	Field Name	Length	M / S	Description
1	US.FREE.FORM.ID	35	S	Ad hoc id
2	US.FEED.ID.TYPE	35	S	Drop down list of sec ID types. Possible values are the field names CUSIP.NO, I.S.I.N., SEDOL.NO, CEDEL.NO, EUROCLEAR.NO, SWISS.NO, MNEMONIC and US.FREE.FORM.ID.

**TABLE 4 – Local Reference fields for Security Master**



This Chapter includes the following sections

CHAPTER 3

Main Subroutines and their Description



q SS.BPI.GET.UPD.FREQ.OUT	q BPI.SC.CONVERT.SECID.TYPE
q BPI.PICK.SAECID.OUT	q BPI.SC.DISCOUNT.YEILD.PERCENT
q BPI.CONV.SECIDTYPE.OUT	q BPI.SC.ERR.STATUS.MSG
q BPI.PRICE.VALIDATION	q BPI.SC.IF.ERROR.PREVENT.SM.UPD
q BPI.CURR.CONV.SM	q BPI.SC.PICK.SECID
q BPI.CURR.CONV.BIP	q BPI.SC.POPULATE.EXCHANGE.RATE
q BPI.POP.EXCH.RATE.BIP	q BPI.SC.SECID.AND.FACTOR.UPD
q BPI.CHECK.BBG.ERR	q BPI.SC.SELECT.PRICE
q BPI.ADD.TODAY.DATE	q SS.BPI.COM.RECORD.DATE
q BPI.COM.CALCULATE.REJECTS	q SS.BPI.SC.GET.UPDATE.FREQUENCY
q BPI.COM.FORMAT.DATE	q SS.BPI.SC.PRICE.VARIANCE
q SS.BPI.ORD.DATE	q SS.BPI.SC.SM.HISTORY.IDS
q SS.BPI.PRICE.CHANGE	q SS.US.MULTI.JOIN
q BPI.COM.REFORMAT.ID	q US.CLEAR.FILE
q BPI.SC.ADD.MV.CAP.RATE	q US.NUM.TO.WORDS
q BPI.SC.CHECK.NULL.DATE	q US.OFS.DIRECT.UPDATE
q BPI.SC.CONV.BLOOMBERG.TO.SM	q US.WRITE.TO.HOLD

3.1 SS.BPI.GET.UPD.FREQ.OUT

This routine is attached to the field USR.FIELD.NO in the Standard Selection record of the Security Master for the I – descriptor field BPI.UPDATE.DATE. It picks up the SUB ASSET TYPE of the current security, reads the SECURITIES record from the BPI.PARAMETER table and reads the value from the field SAT.PR.FREQ.UPD (Daily / Monthly) and returns the date (today or the last working day of the month).

3.2 BPI.PICK.SECID.OUT

This subroutine is a mapping routine. It is attached (in the field FIELD.ROUTINE) to the BPI-SEC.PRICE-1 record in the GIT.MAPPING.OUT where the SS.NAME is @ID and the FIELD.NAME is SECID.



The security id type to be used will be specified in the US.FEED.ID.TYPE in the SECURITY MASTER. This id (feed id) will be picked up by this routine and passed to the GIT interface along with the Globus id (of the SM). It will both be then written into a concat file called BPI.SECID.CONCAT with the feed id being the key.

3.3 BPI.CONV.SECIDTYPE.OUT

This subroutine is a mapping routine. It is attached (in the field FIELD.ROUTINE) to the BPI - SEC.PRICE-1 record in the GIT.FORMATIING.OUT where the FIELD.NAME is SECIDTYPE.

This routine converts the security id type field names into Bloomberg form.

CUSIP.NO changed to CUSIP

I.S.I.N. changed to ISIN

SEDOL.NO changed to SEDOL

CEDEL.NO changed to CEDEL

EUROCLEAR.NO changed to EUROCLEAR

SWISS.NUMBER changed to VALOREN

MNEMONIC changed to TICKER

US.FREE.FORM.ID will become null value.

3.4 BPI.PRICE.VALIDATION

This routine is attached as a FIELD ROUTINE in the BPI-SEC.PRICE-1 record of the GIT.MAPPING.IN file where the FIELD NAME is LAST PRICE and the application is SECURITY MASTER.

A number of prices will be received from the feed. This routine has a logic that will decide which price to choose and it then updates the LAST.PRICE field in the SECURITY.MASTER file.

3.5 BPI.CURR.CONV.SM

This routine is has been merged with BPI.PRICE.VALIDATION.



This routine is a FIELD.ROUTINE attached to the BPI-SEC.PRICE-1 record in the GIT.MAPPING.IN file for the field LAST.PRICE and the application is SECURITY.MASTER.

In the BPI.PARAMETER table, the user can specify if the prices returned from Bloomberg can be in a different currency from that of the security. If allowed, this routine converts the amount received to the security's currency equivalent. If the parameter table does not allow different currencies, an Error Message is generated and stored.

3.6 BPI.CURR.CONV.BIP

This routine is a FIELD.ROUTINE attached to the BPI-SEC.PRICE-1 record in the GIT.MAPPING.IN for the field ERR.STATUS for the application BPI.INCOMING.PRICES.

This routine populates the error message 'Currency in feed is different from currency in GLOBUS' if the BPI.PARAMETER does not allow prices (received from Bloomberg and in GLOBUS) to be in different currencies.

3.7 BPI.POP.EXCH.RATE.BIP

This routine is a FIELD.ROUTINE attached to the BPI-SEC.PRICE-1 record in the GIT.MAPPING.IN for the field EXCHANGE.RATE for the application BPI.INCOMING.PRICES.

This routine populates the field EXCHANGE.RATE with the rate used to find the equivalent amount if the BPI.PARAMETER allows the Bloomberg prices to be in a currency that is different to that of the security.

3.8 BPI.CHECK.BBG.ERR

This is a POST.ROUTINE that is attached to the GIT.MAPPING.IN record.

It will be used to prevent the update of the SECURITY.MASTER record if its corresponding record in the feed is received with an error code from Bloomberg.

3.9 BPI.ADD.TODAY.DATE



This routine will return today's date to the field DATE.OF.FEED in the BPI-SEC.PRICE-1 record in the GIT.MAPPING.IN table.

3.10 BPI.COM.CALCULATE.REJECTS

This routine is a FIELD.ROUTINE attached to the BPI-SEC.PRICE-1 record in the GIT.MAPPING.IN for the field NO.OF.REJECTS.

This subroutine will calculate the no of days that a security has been rejected by Bloomberg.

3.11 BPI.COM.FORMAT.DATE

This routine changes the format of the date to what GLOBUS requires. It is attached as a FIELD.ROUTINE to all fields that contain date value in the GIT.MAPPING.IN record.

3.12 SS.BPI.ORD.DATE

This routine is attached in the STANDARD.SELECTION record of OFS.REQUEST.DETAIL in the I – descriptor field BPI.REC.RECV.DATE.

This routine calculates the date of the record.

3.13 SS.BPI.PRICE.CHANGE

This routine is attached to the STANDARD.SELECTION record of SC.PRICE.CHANGE in the I – descriptor field BPI.PRICE.STATUS.

It sets a flag if the OLD.PRICE and the NEW.PRICE of a security are same.

3.14 BPI.COM.REFORMAT.ID

This subroutine is attached to GIT.MAPPING.IN (both SC and DX) records. Since IDs cannot be stored with blank spaces, they will be stored with '*' in and since '/' gives a problem in OFS message, they will be stored with '#'. This routine converts these before updating GLOBUS.



3.15 BPI.SC.ADD.MV.CAP.RATE

This routine checks if there is a FACTOR multi value set update. If yes, it picks up the existing values and appends the new value making sure that the newest one doesn't over write the previous one and is made the first multi value set.

3.16 BPI.SC.CHECK.NULL.DATE

This routine is attached as a FIELD.ROUTINE in the record BPI-SEC.PRICE-1 in the application GIT.MAPPING.IN for the DATE.LAST.PRICE field.

The feed date is converted to the GLOBUS format and updated. If the field contains time, it is unformatted since Bloomberg time format is the same as GLOBUS time format.

If the field is null then a flag BPI.SM.ERR.COM is set to an appropriate error message can be passed to the field ERR.STATUS in the file BPI.INCOMING.PRICES during the post routine. The ERR.MSG is set so that the SECURITY.MASTER does not get updated.

3.17 BPI.SC.CONV.BLOOMBERG.TO.SM

This routine is a FIELD.ROUTINE in the record BPI-SEC.PRICE-1 in the file GIT.MAPPING.IN where the FIELD.NAME is SEC.NO and the application is BPI.INCOMING.PRICES.

This routine will convert the Bloomberg id to GLOBUS id.

3.18 BPI.SC.CONVERT.SECID.TYPE

This routine is a FIELD.ROUTINE in the record BLOOMBERG.PRICING.SC -1-1 in the file GIT.FORMATting.OUT where the FIELD.NAME is SECIDTYPE.

This routine will convert the sec id type field names defined in GLOBUS into names expected by Bloomberg before sending out the file.



3.19

BPI.SC.DISCOUNT.YEILD.PERCENT

A flag for discounted instrument is set in BPI.PRICE.VALIDATION and so is common variable for selected discount yield percent. In this routine it is assigned to the field.

3.20 BPI.SC.ERR.STATUS.MSG

This routine is a FIELD.ROUTINE in the record BLOOMBERG.PRICING.SC -1-1 in the file GIT.MAPPING.IN for the field ERR.STATUS for the application BPI.INCOMING.PRICES.

If the field CURR.CONVERSION in the record SECURITIES in the file BPI.PARAMETER holds a value of N and the updated price of the security in the feed is not in the same currency as it is held in GLOBUS, a flag BPI.PRICE.CONV.FLAG in BPI.PRICE.VALIDATION. This subroutine is used to populate the appropriate error message.

3.21

BPI.SC.IF.ERROR.PREVENT.SM.UPD

This routine is a POST.ROUTINE in the record in the file GIT.MAPPING.IN. It is used to prevent the update of the SECURITY.MASTER record if its corresponding record in the feed is received with an error code from Bloomberg.

3.22 BPI.SC.PICK.SECID

This routine is a FIELD.ROUTINE in the record BLOOMBERG.PRICING.SC -1-1 in the file GIT.MAPPING.OUT where the SS.NAME is @ID and the FIELD.NAME is SECID.

The security id type to be used during the price update at Bloomberg will already be specified by the user in the field US.FEED.ID.TYPE in SECURITY.MASTER. The specified id will now



be picked up by this subroutine from the corresponding field in SECURITY.MASTER and passed to the GIT interface.

3.23

BPI.SC.POPULATE.EXCHANGE.RATE

This routine is a FIELD.ROUTINE in the record BLOOMBERG.PRICING.SC -1-1 in the file GIT.MAPPING.IN for the field EXCHANGE.RATE for the application BPI.INCOMING.PRICES.

If the field CURR.CONVERSION in the record SECURITIES in the file BPI.PARAMETER holds a value of Y and the updated price of the security in the feed is not in the same currency as it is held in GLOBUS, the flag BPI.PRICE.CONV.FLAG is set to 1 in the program BPI.PRICE.VALIDATION and BPI.EXCHANGE.RATE is set to the exchange rate chosen by the user.

3.24 BPI.SC.SECID.AND.FACTOR.UPD

This program converts the Bloomberg id to the GLOBUS id.

3.25 BPI.SC.SELECT.PRICE

This routine is a FIELD.ROUTINE in the record BLOOMBERG.PRICING.SC -1-1 in the file GIT.MAPPING.IN when the field FIELD.NAME is LAST.PRICE and the application is SECURITY.MASTER.

A number of prices will be received in the feed for each security. This subroutine will be used to choose one of these prices to update the LAST.PRICE field in the SECURITY.MASTER file.

3.26 SS.BPI.COM.RECORD.DATE

This routine is attached to the field USR.FIELD.NO in the STANDARD SELECTION of the OFS REQUEST DETAIL record for the I – descriptor BPI.REC.RECV.DATE.

It computes the date of the record. This I – descriptor is used in the Enquiry BPI.GLOBUS.REJECT.



3.27

SS.BPI.SC.GET.UPDATE.FREQUENCY

This routine is defined in the USR.FIELD.NO in the STANDARD.SELECTION file in the record SECURITY.MASTER for the I-descriptor BPI.UPDATE.DATE.

The frequency at which prices will be updated for each SUB ASSET TYPE is defined in the BPI.PARAMETER table.

If this field contains a value DAILY, then it will send back an outgoing data of today's date.

If this field contains a value MONTHLY then it will send back an outgoing data of the last working day of the present month.

This outgoing date will be placed in the I-descriptor.

3.28 SS.BPI.SC.PRICE.VARIANCE

This routine calculates the Variance in the LAST.PRICE field in the SECURITY MASTER with the previous value, now stored in the HISTORY file.

3.29 SS.BPI.SC.SM.HISTORY.IDS

This routine is attached to the STANDARD SELECTION record of the SECURITY MASTER in the field SECURITY.ID. It is used in the Enquiry SM PRICE HISTORY, to return the History ID list.

3.30 SS.US.MULTI.JOIN



This is a generic routine that can be used instead of a J – descriptor in the STANDARD SELECTION record where the reference field passed is a multi value and the result needs to be a multi value too. Currently the JOIN function does not support this.

3.31 US.CLEAR.FILE

This routine picks the field DATA from BATCH DETAILS (common variable) and finds out the number of files to be cleared and clears them.

3.32 US.NUM.TO.WORDS

This routine converts the given number to words

3.33 US.OFS.DIRECT.UPDATE

This routine is used to update various applications using OFS without running it in Phantom mode. The incoming parameter is the data in OFS format.

3.34 US.WRITE.TO.HOLD

This routine is invoked at Authorization stage. It writes R.NEW to the \$NAU file and if not and error message is returned in ETEXT.



CHAPTER 4

Version Routines

This Chapter includes the following sections

- q **V.BPI.VALIDATE.FEED.ID.TYPE**
- q **V.BPI.SC.ADD.COUPON.DETAILS**
- q **V.US.GIT.CREATE.FILES**



4.1 V.BPI.VALIDATE.FEED.ID.TYPE

This routine is attached in the VERSION.CONTROL record of the SECURITY MASTER application to the field US.FEED.ID.TYPE.

This routine prevents a null from being passed to the Bloomberg request file.

4.2 V.BPI.SC.ADD.COUPON.DETAILS

This routine is attached to the BPI Price Update version of the SECURITY MASTER to take the values updated in the local ref fields and US.CPN.DATE, US.CPN.RATE, US.CAP.RATE, US.FACTOR and insert them into system fields.

4.3 V.US.GIT.CREATE.FILES

This routine is a version level FIELD VALIDATION routine attached to all the PATH fields (IN.PATH, OUT.PATH, LOG.PATH, BACKUP.PATH) in the GIT.TRANSPORT.FILE.

It will check if the file exists, else, would create upon consent from the user, and subsequently create the VOC. It would also delete the old path, again, upon consent from the user (this is just to facilitate easier maintenance of files)



CHAPTER 5

SERVICE Routines



5.1 OFS.PH.POST.SERVICE

This routine is a service routine. This routine is attached in the Batch and service is created with the name BNK/OFS.PH.POST.SERVICE. The two ids are created after GIT.INTERFACE.IN is verified and the service is started. which calls OFS.POST.MESSAGE that in turn(which contains the OFS MESSAGE) will be written to F.OFS.MESSAGE.QUEUE with a unique ID (Allocate.Unique.Time) and updates the SECURITY.MASTER table .

Implementation of service

The steps to initiate:

- 1.Start the TSM
- 2.Start the OFS.MESSAGE.SERVICE
3. Start the OFS.PH.POST.SERVICE

If the SERVICE BNK/OFS.MESSAGE.SERVICE is started the output of the OFS MESSAGE can be seen in F.OFS.RESPONSE.QUEUE

```
jsh r06001 ~ -->STAR.TSM -DEBUG
STAR.TSM: No such file or directory
jsh r06001 ~ -->START.TSM -DEBUG
START.TSM -DEBUG
tSA 1 -DEBUG
Agent 1 started 14 AUG 07 15:59:43
Running on server emea PortNumber 8
tSM -DEBUG

Service Profile BFCS.INWARD BFCS.INWARD (1)
                BNK/ABL.TRANSACTION.PROCESSING ABL.TRANSACTION.PROCESSING (2)
                TSM FOR TSM (1)
                BNK/OFS.MESSAGE.SERVICE TSA OFS message service (1)

Manually launch tSA 2    BFCS.INWARD
Manually launch tSA 3    BNK/ABL.TRANSACTION.PROCESSING
Manually launch tSA 4    BNK/ABL.TRANSACTION.PROCESSING
Manually launch tSA 5    BNK/OFS.MESSAGE.SERVICE
```

F.OFS.RESPONSE.QUEUE

```
LIST F.OFS.MESSAGE.QUEUE                PAGE    1 18:41:35
@ID.....
144780001043519.01-BLOOMBERG.PRicing
144780001043519.00-BLOOMBERG.PRicing

 2 Records Listed
```



Update SECURITY.MASTER:

SCREEN SHOT OF SECURITY.MASTER AFTER VERIFYING GIT.INTERFACE.IN AND RUNNING THE SERVICE:

```
BNK TESTBASE SECURITY.MASTER SEE
-----
SECURITY.CODE..... 100048-000
-----
1. 1 GB COMPANY.NAME AMGEN INC.
2. 1. 1 GB DESCRIPT. AMGEN INC. COMMON STK.
3. 1 GB SHORT.NAME.. AMGEN INC COM STK (US)
4 MNEMONIC..... NASAMGN
5 COMPANY.DOMICILE.. US USA
6 SECURITY.DOMICILE. US USA
7 SECURITY.CURRENCY. USD US Dollar1
8 BOND.OR.SHARE..... S
9 SUB.ASSET.TYPE.... 301 DOMESTIC SHARES
10 PRICE.CURRENCY.... USD US Dollar1
11 PRICE.TYPE..... 0 UNIT PRICE
15 LAST.PRICE..... 999 USD
16 DATE.LAST.PRICE... 04 DEC 2000
17 PRICE.UPDATE.CODE. 2 MANUAL
18 INDUSTRY.CODE..... 280 PHARMACEUTICALS
19 STOCK.EXCHANGE.... 065 NEW YORK STOCK EXCHANGE
-----
```

NOTE:

Working of BLOOMBERG INTERFACE is purely base d on the position of the incoming message from the BLOOMBERG.