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Odd Lot Quote Examples

1. Participant Aggregation Examples:

These examples represent how exchanges aggregate their orders for reporting Odd Lot quotes to the SIPs. Examples show quote(s) reported to the SIP's at each step, followed by the end state. All examples are based on symbols with Round Lot Size = 100.

Note - This is not validated by the SIP and is based on SIP's understanding of how Participants plan to report their round lot and odd lot quotes to SIP

1.1 Multiple odd lot orders exist at the same price (a total of 120 shares)

#	Participant Book	Quotes reported to SIP
1	Buy 30 shares @10.00	Publish 30 shares @ 10.00 as an odd lot bid price
2	Buy 40 shares @10.00	Publish 70 shares @ 10.00 as an updated odd lot bid price
3	Buy 50 shares @10.00	Publish 100 shares @ 10.00 as round lot bid price and 20 shares @ 10.00 as an updated odd lot bid price

End State after step 3:

- Round Lot quote at SIP:
 - 100 Bid @10.00
- Odd Lot quotes at SIP:
 - 20 Bid @10.00

1.2 Multiple odd lot orders exist at different prices (a total of 120 shares). No price has more than 1 round lot share

#	Participant Book	Quotes reported to SIP
1	Buy 30 shares @10.02	Publish 30 shares @ 10.02 as an odd lot bid price
2	Buy 40 shares @10.01	Publish 40 shares @ 10.01 as an odd lot bid price
3	Buy 50 shares @10.00	Publish 100 shares @ 10.00 as round lot bid price and 50 shares @ 10.00 as an odd lot bid price

End State after step 3:

- Round Lot Price at SIP:
 - 100 Bid @10.00 (shares aggregated across prices)
- Odd Lot quotes at SIP:
 - 30 Bid @ 10.02
 - 40 Bid @ 10.01
 - 50 Bid @ 10.00

1.3 Multiple odd lot orders exist at different prices (a total of 180 shares). Round lot shares exist at a single price

#	Participant Book	Quotes reported to SIP
1	Buy 30 shares @10.02	Publish 30 shares @ 10.02 as an odd lot bid price
2	Buy 40 shares @10.01	Publish 40 shares @ 10.01 as an odd lot bid price
3	Buy 50 shares @10.00	Publish 100 shares @ 10.00 as round lot bid price and 50 shares @ 10.00 as an odd lot bid price
4	Buy 60 shares @10.00	Re-publish 100 shares @ 10.00 as round lot price and 10 shares @ 10.00 as an updated odd lot bid price

End State after step 4:

- Round Lot quote at SIP:
 - 100 Bid @10.00 (shares aggregated across prices)
- Odd Lot quotes at SIP:
 - 30 Bid @ 10.02
 - 40 Bid @ 10.01
 - 10 Bid @ 10.00

1.4 Multiple odd lot orders exist at different prices (a total of 220 shares). Round lot shares exist at a single price

#	Participant Book	Quotes reported to SIP
1	Buy 70 shares @10.02	Publish 70 shares @ 10.02 as an odd lot bid price
2	Buy 40 shares @10.01	Publish 100 shares @ 10.01 as a round lot price and 40 shares @ 10.01 as an odd lot bid price
3	Buy 50 shares @10.00	no update
4	Buy 60 shares @10.00	no update

End State after step 4:

- Round Lot quote at SIP:
 - 100 Bid @ 10.01
- Odd Lot quotes at SIP:
 - 70 Bid @ 10.02
 - 40 Bid @ 10.01
 - nothing to report @ 10.00 since it is below the Best Bid of 10.01

1.5 Multiple odd lot orders exist at different prices (a total of 140 shares). No Round Lot Shares exist at a single price

#	Participant Book	Quotes reported to SIP
1	Buy 20 shares @10.02	Publish 20 shares @ 10.02 as an odd lot bid price
2	Buy 40 shares @10.01	Publish 40 shares @ 10.01 as an odd lot bid price
3	Buy 50 shares @10.00	Publish 100 shares @ 10.00 as a round lot price and 50 shares @ 10.00 as an odd lot bid price
4	Buy 30 shares @10.00	Publish 80 shares @ 10.00 as an updated odd lot bid price

End State after step 4:

- Round Lot quote at SIP:
 - 100 Bid @10.00 (shares aggregated across prices)
- Odd Lot quotes at SIP:
 - 20 Bid at 10.02
 - 40 Bid at 10.01
 - 80 Bid at 10.00 (there are two odd lots at 10.00 that get added together)

1.6 Multiple odd lot orders exist at different prices (a total of 270 shares). Mixed Lot Shares exist at a single price (multiple orders at the price)

#	Participant Book	Quotes reported to SIP
1	Buy 20 shares @10.02	Publish 20 shares @ 10.02 as an odd lot bid price
2	Buy 40 shares @10.01	Publish 40 shares @ 10.01 as an odd lot bid price
3	Buy 50 shares @10.00	Publish 100 shares @ 10.00 as a round lot price and 50 shares @ 10.00 as an odd lot bid price
4	Buy 160 shares @10.00	Publish 200 shares @ 10.00 as an updated round lot price 10 shares @ 10.00 as an updated odd lot bid price

End State after step 4:

- Round Lot quote at SIP:
 - 200 Bid @10.00 (shares aggregated across prices)
- Odd Lot quotes at SIP:
 - 20 Bid at 10.02
 - 40 Bid at 10.01
 - 10 Bid @ 10.00 (there are 210 shares priced at 10.00, so the odd lot portion is 10)

- 1.7 Multiple Mixed Lot and Odd lot orders exist at different prices (a total of 270 shares).
Mixed Lot shares exist at a single price (first order)

#	Participant Book	Quotes reported to SIP
1	Buy 120 shares @10.02	Publish 100 shares @ 10.02 as a round lot price and 20 shares @ 10.02 as an odd lot bid price
2	Buy 40 shares @10.01	no update
3	Buy 50 shares @10.00	no update
4	Buy 60 shares @10.00	no update

End State after step 4:

- Round Lot quote at SIP:
 - 100 Bid @ 10.02
- Odd Lot quotes at SIP:
 - 20 Bid @ 10.02

2. CQS Input Message Examples:

These examples provide sample messages on how Participants can provide Round Lot and Odd Lot quote updates to SIPs via the new messages

2.1 Short Quote Message Example

2.1.1 Example shows a Participant provides a round lot quote via Round Lot Short Quote (Category Q Type P) while there are no odd lot quotes to report

1. Round Lot Quote: 200x2.13 - 100x2.15
2. Odd lot quote related fields on the message are not populated
 - a. Clear Prior Odd Lot Quotes = *space* (not populated)
 - b. Count of Odd Lot Bid appendages = 0
 - c. Count of Odd Lot Offer appendages = 0

Field Name	Field Length	Field Value
Message Length	2	43
Message Category	1	Q
Message Type	1	P
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	5	XYZ
Round Lot Bid Price	2	2.13
Round Lot Bid Size	2	200
Round Lot Offer Price	2	2.15
Round Lot Offer Size	2	100
Reserved	1	
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	0
Count of Odd Lot Offer appendages	1	0

2.1.2 Participant updates its round lot quote (from step 1) and reports odd lot quotes via the Odd Lot Short Quote Appendages on the message

1. Round Lot Quote: 300x2.11 - 100x2.18
2. 2 Odd Lot Short Quote Appendages for bids ('Count of Odd Lot Bid appendages' = 2):
 - a. Bid: 1x2.12
 - b. Bid: 2x2.11
3. 3 Odd Lot Short Quote Appendages for Offer ('Count of Odd Lot Offer appendages' = 3):
 - a. Offer: 1x2.16
 - a. Offer: 2x2.17
 - b. Offer: 3x2.18

Field Name	Field Length	Field Value
Message Length	2	58
Message Category	1	Q
Message Type	1	P
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	5	XYZ
Round Lot Bid Price	2	2.11
Round Lot Bid Size	2	300
Round Lot Offer Price	2	2.18
Round Lot Offer Size	2	100
Reserved	1	
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	2
Count of Odd Lot Offer appendages	1	3
Odd Lot Quote Price (Bid-1)	2	2.12
Odd Lot Quote Size (Bid-1)	1	1
Odd Lot Quote Price (Bid-2)	2	2.11
Odd Lot Quote Size (Bid-2)	1	2
Odd Lot Quote Price (Offer-1)	2	2.16
Odd Lot Quote Size (Offer-1)	1	1
Odd Lot Quote Price (Offer-2)	2	2.17
Odd Lot Quote Size (Offer-2)	1	2
Odd Lot Quote Price (Offer-3)	2	2.18
Odd Lot Quote Size (Offer-3)	1	3

2.1.3 Participant provides additional odd lot updates via Odd Lot Short Quote (Category Q Type R) as there is no round lot quote update

1. 1 Odd Lot Short Quote Appendages for bid ('Count of Odd Lot Bid appendages' = 1):
 - a. Clear odd lot Bid at 2.12
2. 3 Odd Lot Short Quote Appendages for Offers ('Count of Odd Lot Offer appendages' = 3) :
 - a. Clear odd lot Offer at 2.17
 - b. New odd lot Offer: 4x2.15
 - c. Update Offer at 2.18: 5x2.18

Field Name	Field Length	Length
Message Length	2	46
Message Category	1	Q
Message Type	1	R
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	5	XYZ
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	1
Count of Odd Lot Offer appendages	1	3
Odd Lot Quote Price (Bid-1)	2	2.12
Odd Lot Quote Size (Bid-1)	1	0
Odd Lot Quote Price (Offer-1)	2	2.17
Odd Lot Quote Size (Offer-1)	1	0
Odd Lot Quote Price (Offer-2)	2	2.15
Odd Lot Quote Size (Offer-2)	1	4
Odd Lot Quote Price (Offer-3)	2	2.18
Odd Lot Quote Size (Offer-3)	1	5

Remaining odd Lot quotes after this update:

- Bid: 2x2.11
- Offer: 4x2.15
- Offer: 1x2.16
- Offer: 5x2.18

2.1.4 Participant's round lot offer updates to 2.14. Participant provides a round lot quote without any odd lot appendages, with 'Clear Prior Odd Lot Quotes' flag set to clear all previous odd lot offers

Field Name	Field Length	Field Value
Message Length	2	43
Message Category	1	Q
Message Type	1	P
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	5	XYZ
Round Lot Bid Price	2	2.11
Round Lot Bid Size	2	300
Round Lot Offer Price	2	2.14
Round Lot Offer Size	2	100
Reserved	1	
Clear Prior Odd Lot Quotes	1	S
Count of Odd Lot Bid appendages	1	0
Count of Odd Lot Offer appendages	1	0

In above message, 'Clear Prior Odd Lot Quotes' field is used to clear all odd lot offers. Alternately, Participant can provide odd lot appendages to explicitly clear each of the three odd lot offers.

Remaining odd Lot quotes after this update:

- Bid: 2x2.11

2.2 Long Quote Message Example

2.2.1 Example shows a Participant provides a round lot quote via Round Lot Long Quote (Category Q Type K) while there are no odd lot quotes to report

1. Round Lot Quote: 200x2.13 - 100x2.15
2. Odd lot quote related fields on the message are not populated
 - a. Clear Prior Odd Lot Quotes = space (not populated)
 - b. Count of Odd Lot Bid appendages = 0
 - c. Count of Odd Lot Offer appendages = 0

Field Name	Field Length	Field Value
Message Length	2	81
Message Category	1	Q
Message Type	1	K
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Quote Condition	1	R
Round Lot Bid Price	8	2.13
Round Lot Bid Size	4	200
Round Lot Offer Price	8	2.15
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	0
Count of Odd Lot Offer appendages	1	0

2.2.2 Participant updates its round lot quote (from step 1) and reports odd lot quotes via the Odd Lot Long Quote Appendages on the message

1. Round Lot Quote: 300x2.11 - 100x2.18
2. 2 Odd Lot Long Quote Appendages for bids ('Count of Odd Lot Bid appendages' = 2) :
 - a. Bid: 1x2.12
 - b. Bid: 2x2.11
3. 3 Odd Lot Long Quote Appendages for Offer ('Count of Odd Lot Offer appendages' = 3) :
 - a. Offer: 1x2.16
 - b. Offer: 2x2.17
 - c. Offer: 3x2.18

Field Name	Field Length	Field Value
Message Length	2	126
Message Category	1	Q
Message Type	1	K
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Quote Condition	1	R
Round Lot Bid Price	8	2.11
Round Lot Bid Size	4	300
Round Lot Offer Price	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	2
Count of Odd Lot Offer appendages	1	3
Odd Lot Quote Price (Bid-1)	8	2.12
Odd Lot Quote Size (Bid-1)	1	1
Odd Lot Quote Price (Bid-2)	8	2.11
Odd Lot Quote Size (Bid-2)	1	2
Odd Lot Quote Price (Offer-1)	8	2.16
Odd Lot Quote Size (Offer-1)	1	1
Odd Lot Quote Price (Offer-2)	8	2.17
Odd Lot Quote Size (Offer-2)	1	2
Odd Lot Quote Price (Offer-3)	8	2.18
Odd Lot Quote Size (Offer-3)	1	3

2.2.3 Participant provides additional odd lot updates via Odd Lot Long Quote (Category Q Type M) as there is no round lot quote update

1. 1 Odd Lot Long Quote Appendages for bid ('Count of Odd Lot Bid appendages' = 1):
 - a. Clear odd lot Bid at 2.12
2. 3 Odd Lot Long Quote Appendages for Offers ('Count of Odd Lot Offer appendages' = 3) :
 - a. Clear odd lot Offer at 2.17
 - b. New odd lot Offer: 4x2.15
 - c. Update Offer at 2.18: 5x2.18

Field Name	Field Length	Field Value
Message Length	2	76
Message Category	1	Q
Message Type	1	M
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	1
Count of Odd Lot Offer appendages	1	3
Odd Lot Quote Price (Bid-1)	8	2.12
Odd Lot Quote Size (Bid-1)	1	0
Odd Lot Quote Price (Offer-1)	8	2.17
Odd Lot Quote Size (Offer-1)	1	0
Odd Lot Quote Price (Offer-2)	8	2.15
Odd Lot Quote Size (Offer-2)	1	4
Odd Lot Quote Price (Offer-3)	8	2.18
Odd Lot Quote Size (Offer-3)	1	5

Remaining odd Lot quotes after this update:

- Bid: 2x2.11
- Offer: 4x2.15
- Offer: 1x2.16
- Offer: 5x2.18

2.2.4 Participant's Round Lot Offer updates to 2.14. Participant provides a round lot quote without any odd lot appendages, with 'Clear Prior Odd Lot Quotes' flag set to clear all previous odd lot offers

Field Name	Field Length	Field Value
Message Length	2	81
Message Category	1	Q
Message Type	1	K
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Quote Condition	1	R
Round Lot Bid Price	8	2.11
Round Lot Bid Size	4	300
Round Lot Offer Price	8	2.14
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Clear Prior Odd Lot Quotes	1	S
Count of Odd Lot Bid appendages	1	0
Count of Odd Lot Offer appendages	1	0

In above message, 'Clear Prior Odd Lot Quotes' field is used to clear all odd lot offers. Alternately, Participant can provide odd lot appendages to explicitly clear each of the three odd lot offers.

Remaining odd Lot quotes after this update:

- Bid: 2x2.11

2.3 Special Long Quote (FINRA ADF) Message example

2.3.1 Example shows FINRA ADF provides a round lot quote via Round Lot FINRA ADF Quote (Category Q Type U) while there are no odd lot quotes to report

1. Round Lot Quote: 200x2.13 - 100x2.15 (FINRA MMID = 'ABCD')
2. FINRA BBO: 200x2.13 (ABCD) - 100x2.15 (ABCD)
3. Odd lot quote related fields on the message are not populated
 - a. Clear Prior Odd Lot Quotes = *space* (not populated)
 - b. Count of Odd Lot Bid appendages = 0
 - c. Count of Odd Lot Offer appendages = 0

Field Name	Field Length	Field Value
Message Length	2	114
Message Category	1	Q
Message Type	1	U
Participant ID	1	D
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Quote Condition	1	R
Round Lot Bid Price	8	2.13
Round Lot Bid Size	4	200
Round Lot Offer Price	8	2.15
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	ABCD
FINRA Best Bid Quote Condition	1	R
FINRA Best Bid Price	8	2.13
FINRA Best Bid Size	4	200
FINRA Best Bid Market Maker ID	4	ABCD
FINRA Best Offer Quote Condition	1	R
FINRA Best Offer Price	8	2.15
FINRA Best Offer Size	4	100
FINRA Best Offer Market Maker ID	4	ABCD
Timestamp 2	8	0
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	0
Count of Odd Lot Offer appendages	1	0

2.3.2 FINRA ADF Participant ABCD round lot quote (from step 1) has an update. FINRA ADF reports the updated round lot quote along with odd lot quotes via the Odd Lot Extended Quote Appendages on the message

1. Round Lot Quote: 300x2.11 - 100x2.18
2. FINRA BBO: 300x2.11 (ABCD) - 100x2.18 (ABCD)
3. 2 Odd Lot Long Quote Appendages for bids ('Count of Odd Lot Bid appendages' = 2):
 - a. Bid: 1x2.12 (ABCD)
 - b. Bid: 2x2.11 (ABCD)
4. 3 Odd Lot Long Quote Appendages for Offer ('Count of Odd Lot Offer appendages' = 3):
 - a. Offer: 1x2.16 (ABCD)
 - b. Offer: 2x2.17 (ABCD)
 - c. Offer: 3x2.18 (ABCD)

Field Name	Field Length	Field Value
Message Length	2	179
Message Category	1	Q
Message Type	1	U
Participant ID	1	D
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Quote Condition	1	R
Round Lot Bid Price	8	2.11
Round Lot Bid Size	4	300
Round Lot Offer Price	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	ABCD
FINRA Best Bid Quote Condition	1	R
FINRA Best Bid Price	8	2.11
FINRA Best Bid Size	4	300
FINRA Best Bid Market Maker ID	4	ABCD
FINRA Best Offer Quote Condition	1	R
FINRA Best Offer Price	8	2.18
FINRA Best Offer Size	4	100
FINRA Best Offer Market Maker ID	4	ABCD
Timestamp 2	8	0
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	2

Count of Odd Lot Offer appendages	1	3
Odd Lot Quote Price (Bid-1)	8	2.12
Odd Lot Quote Size (Bid-1)	1	1
Odd Lot FINRA Market Maker ID (Bid-1)	4	ABCD
Odd Lot Quote Price (Bid-2)	8	2.11
Odd Lot Quote Size (Bid-2)	1	2
Odd Lot FINRA Market Maker ID (Bid-2)	4	ABCD
Odd Lot Quote Price (Offer-1)	8	2.16
Odd Lot Quote Size (Offer-1)	1	1
Odd Lot FINRA Market Maker ID (Offer-1)	4	ABCD
Odd Lot Quote Price (Offer-2)	8	2.17
Odd Lot Quote Size (Offer-2)	1	2
Odd Lot FINRA Market Maker ID (Offer-2)	4	ABCD
Odd Lot Quote Price (Offer-3)	8	2.18
Odd Lot Quote Size (Offer-3)	1	3
Odd Lot FINRA Market Maker ID (Offer-3)	4	ABCD

2.3.3 FINRA provide additional odd lot updates via Odd Lot FINRA Quote (Category Q Type T) as there is no round lot quote update

1. 1 Odd Lot Long Quote Appendages for bid ('Count of Odd Lot Bid appendages' = 1):
 - a. Clear odd lot Bid at 2.12
2. 3 Odd Lot Long Quote Appendages for Offers ('Count of Odd Lot Offer appendages' = 3):
 - a. Clear odd lot Offer at 2.17
 - b. New odd lot Offer: 4x2.15 (ABCD)
 - c. Update Offer at 2.18: 5x2.18 (FINRA MMID = EFGH)
 - ❖ Example represents if an odd lot offer from a different FINRA MMID (EFGH) is reported by FINRA ADF at the same price. the previous odd lot offer (from MMID 'ABCD') does not require an explicit removal since the price has not changed. Odd lot quote with latest MMID replaces the previous odd lot quote at that price

Field Name	Field Length	Field Value
Message Length	2	95
Message Category	1	Q
Message Type	1	T
Participant ID	1	D
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	1
Round Lot Bid Size	4	3
Odd Lot Quote Price (Bid-1)	8	2.12

Odd Lot Quote Size (Bid-1)	1	0
Odd Lot FINRA Market Maker ID (Bid-1)	4	ABCD
Odd Lot Quote Price (Offer-1)	8	2.17
Odd Lot Quote Size (Offer-1)	1	0
Odd Lot FINRA Market Maker ID (Offer-1)	4	ABCD
Odd Lot Quote Price (Offer -2)	8	2.15
Odd Lot Quote Size (Offer -2)	1	4
Odd Lot FINRA Market Maker ID (Offer-2)	4	ABCD
Odd Lot Quote Price (Offer -2)	8	2.18
Odd Lot Quote Size (Offer -2)	1	5
Odd Lot FINRA Market Maker ID (Offer-2)	4	EFGH

Remaining odd Lot quotes after this update:

- Bid: 2x2.11 (ABCD)
- Offer: 4x2.15 (ABCD)
- Offer: 1x2.16 (ABCD)
- Offer: 5x2.18 (EFGH)

2.3.4 FINRA ADF has a new round lot quote from Participant EFGH, which updates the FINRA BBO. It provides the round lot quote without any odd lot appendages, with 'Clear Prior Odd Lot Quotes' flag set to clear all previous odd lot offers

1. Round Lot Quote: 500x2.10 - 100x2.14 (EFGH)
2. FINRA BBO: 300x2.11 (ABCD) - 100x2.14 (EFGH)

Field Name	Field Length	Field Value
Message Length	2	114
Message Category	1	Q
Message Type	1	U
Participant ID	1	D
Timestamp 1	8	1234567890
Message ID	1	1
Reserved	4	
Participant Reference Number	8	123456789
Security Symbol	11	XYZ
Quote Condition	1	R
Round Lot Bid Price	8	2.10
Round Lot Bid Size	4	500
Round Lot Offer Price	8	2.14
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	EFGH
FINRA Best Bid Quote Condition	1	R
FINRA Best Bid Price	8	2.11
FINRA Best Bid Size	4	300
FINRA Best Bid Market Maker ID	4	ABCD
FINRA Best Offer Quote Condition	1	R
FINRA Best Offer Price	8	2.14
FINRA Best Offer Size	4	100
FINRA Best Offer Market Maker ID	4	EFGH
Timestamp 2	8	0
Clear Prior Odd Lot Quotes	1	S
Count of Odd Lot Bid appendages	1	0
Count of Odd Lot Offer appendages	1	0

In above message, 'Clear Prior Odd Lot Quotes' field is used to clear all odd lot offers. Alternately, odd lot appendages can be used to explicitly clear each of the three odd lot offers.

Remaining odd Lot quotes after this update:

- Bid: 2x2.11 (ABCD)

3. CQS Output Message Examples

3.1 Exchange Quote Example

3.1.1 Example shows CTA publishing a Round Lot Long Quote (Category Q Type K) while there are no odd lot quotes to report

1. Round Lot Quote (Participant ID H) : 100x2.11 - 100x2.18
2. No NBBO Appendage
3. Odd lot quote related fields on the message are not populated
 - a. Clear Prior Odd Lot Quotes = *space* (not populated)
 - b. Count of Odd Lot Bid appendages = 0
 - c. Count of Odd Lot Offer appendages = 0
4. No BOLO Appendage

Field Name	Field Length	Field Value
Message Length	2	89
Message Category	1	Q
Message Type	1	K
Participant ID	1	H
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321
Security Symbol	11	XYZ
Quote Condition	1	R
Security Status Indicator	1	
Round Lot Bid Price / Lower Limit Price Band	8	2.11
Round Lot Bid Size	4	100
Round Lot Offer Price / Upper Limit Price	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Short Sale Restriction Indicator	1	
Primary Listing Market Participant ID	1	N
SIP Generated Message Identifier	1	
Limit Up-Limit Down (LULD) Indicator	1	
National BBO LULD Indicator	1	
National BBO Indicator	1	G
BOLO Indicator	1	L
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	0

Count of Odd Lot Offer appendages	1	0
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3.1.2 CTA publishes another Round Lot Long Quote for the symbol (from step 1) with NBBO appendages while there are no odd lot quotes to report

1. Round Lot Quote (Participant ID N): 300x2.11 - 100x2.18
2. NBBO Appendage ('National BBO Indicator' = U)
3. Odd lot quote related fields on the message are not populated
 - a. Clear Prior Odd Lot Quotes = *space* (not populated)
 - b. Count of Odd Lot Bid appendages = 0
 - c. Count of Odd Lot Offer appendages = 0
4. No BOLO Appendage

Field Name	Field Length	Field Value
Message Length	2	119
Message Category	1	Q
Message Type	1	K
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321
Security Symbol	11	XYZ
Quote Condition	1	R
Security Status Indicator	1	
Round Lot Bid Price / Lower Limit Price Band	8	2.11
Round Lot Bid Size	4	300
Round Lot Offer Price / Upper Limit Price Band	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Short Sale Restriction Indicator	1	
Primary Listing Market Participant ID	1	N
SIP Generated Message Identifier	1	
Limit Up-Limit Down (LULD) Indicator	1	
National BBO LULD Indicator	1	
National BBO Indicator	1	U
BOLO Indicator	1	L
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	3
Count of Odd Lot Offer appendages	1	1

Best Bid Participant ID (NBBO-Bid)	1	N
Best Bid Quote Condition (NBBO-Bid)	1	R
Best Bid Price (NBBO-Bid)	8	2.11
Best Bid Size (NBBO-Bid)	4	300
FINRA Best Bid Market Maker ID (NBBO-Bid)	1	
Best Offer Participant ID (NBBO-Offer)	1	H
Best Offer Quote Condition (NBBO-Offer)	1	R
Best Offer Price (NBBO-Offer)	8	2.18
Best Offer Size (NBBO-Offer)	4	100
FINRA Best Offer Market Maker ID (NBBO-Offer)	1	

3.1.3 CTA publishes another Round Lot Long Quote for the symbol which includes odd lot quotes via the Odd Lot Extended Quote Appendages on the message. Message also includes 2-sided NBBO and 1-sided BOLO (Best Bid) appendage.

1. Round Lot Quote (Participant ID N): 500x2.11 - 100x2.18
2. NBBO Appendage ('National BBO Indicator' = U)
3. 3 Odd Lot Extended Quote Appendages for bids ('Count of Odd Lot Bid appendages' = 3) :
 - a. Bid (Participant ID N): 1x2.13
 - b. Bid (Participant ID P): 2x2.12
 - c. Bid (Participant ID H): 2x2.12
4. 1 Odd Lot Extended Quote Appendage for offer ('Count of Odd Lot Offer appendages'=1):
 - a. Offer (Participant ID N): 1x2.16
5. BOLO Bid Appendage ('BOLO Indicator' = N, BOLO offer appendage not included, quote contains odd lot best offer)

Field Name	Field Length	Field Value
Message Length	2	189
Message Category	1	Q
Message Type	1	K
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321
Security Symbol	11	XYZ
Quote Condition	1	R
Security Status Indicator	1	
Round Lot Bid Price / Lower Limit Price Band	8	2.11
Round Lot Bid Size	4	500
Round Lot Offer Price / Upper Limit Price Band	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	

FINRA BBO Indicator	1	
Timestamp 2	8	0
Short Sale Restriction Indicator	1	
Primary Listing Market Participant ID	1	N
SIP Generated Message Identifier	1	
Limit Up-Limit Down (LULD) Indicator	1	
National BBO LULD Indicator	1	
National BBO Indicator	1	U
BOLO Indicator	1	N
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	3
Count of Odd Lot Offer appendages	1	1
Best Bid Participant ID (NBBO-Bid)	1	N
Best Bid Quote Condition (NBBO-Bid)	1	R
Best Bid Price (NBBO-Bid)	8	2.11
Best Bid Size (NBBO-Bid)	4	500
FINRA Best Bid Market Maker ID (NBBO-Bid)	1	
Best Offer Participant ID (NBBO-Offer)	1	H
Best Offer Quote Condition (NBBO-Offer)	1	R
Best Offer Price (NBBO-Offer)	8	2.18
Best Offer Size (NBBO-Offer)	4	100
FINRA Best Offer Market Maker ID (NBBO-Offer)	1	
Odd lot Quote Participant ID (Bid-1)	1	N
Odd Lot Quote Price (Bid-1)	8	2.13
Odd Lot Quote Size (Bid-1)	1	1
Odd Lot FINRA Market Maker ID (Bid-1)	4	
Odd lot Quote Participant ID (Bid-2)	1	P
Odd Lot Quote Price (Bid-2)	8	2.12
Odd Lot Quote Size (Bid-2)	1	2
Odd Lot FINRA Market Maker ID (Bid-2)	4	
Odd lot Quote Participant ID (Bid-3)	1	H
Odd Lot Quote Price (Bid-3)	8	2.12
Odd Lot Quote Size (Bid-3)	1	2
Odd Lot FINRA Market Maker ID (Bid-3)	4	
Odd lot Quote Participant ID (Offer-1)	1	N
Odd Lot Quote Price (Offer-1)	8	2.16
Odd Lot Quote Size (Offer-1)	1	1
Odd Lot FINRA Market Maker ID (Offer-1)	4	
Odd Lot Best Bid Participant ID (BOLO-Bid)	1	N
Odd Lot Best Bid Quote Price (BOLO-Bid)	8	2.13
Odd Lot Best Bid Quote Size (BOLO-Bid)	1	1
Odd Lot FINRA Best Bid Market Maker ID	4	

Odd lot quotes after this update:

- Bid (Participant ID N): 1x2.13
- Bid (Participant ID P): 2x2.12
- Bid (Participant ID H): 2x2.12
- Offer (Participant ID N): 2x2.16

BOLO: 1x2.13 (N) - 1x2.16 (N)

NBBO: 500x2.11(N) - 100x2.18 (H)

3.1.4 CTA publishes updates for the symbol via an Odd Lot Short Quote (Category Q Type R) which includes:

1. Clear Flag set for Participant ID 'N' (as per Participant ID in message header)
2. 2 Odd Lot Short Quote Appendages for bids ('Count of Odd Lot Bid appendages' = 2) :
 - a. Bid (Participant ID P): 0x2.12 (clear previous Bid)
 - b. Bid (Participant ID P): 2x2.11
3. 2 Odd Lot Short Quote Appendages for offer ('Count of Odd Lot Offer appendages' = 2) :
 - a. Offer (Participant ID H): 2x2.17
 - b. Offer (Participant ID H): 3x2.18
4. BOLO appendages ('BOLO Indicator' = O)

Note - Participant ID in the message header does not correspond to the odd lot quotes, Participant ID for each odd lot quote is identified within each odd lot quote appendage

Field Name	Field Length	Field Value
Message Length	2	79
Message Category	1	Q
Message Type	1	R
Participant ID	1	N
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321
Security Symbol	5	XYZ
BOLO Indicator	1	O
Clear Prior Odd Lot Quotes	1	X
Count of Odd Lot Bid appendages	1	2
Count of Odd Lot Offer appendages	1	2
Odd lot Quote Participant ID (Bid-1)	1	P
Odd Lot Quote Price (Bid-1)	2	2.12
Odd Lot Quote Size (Bid-1)	1	0
Odd lot Quote Participant ID (Bid-2)	1	P
Odd Lot Quote Price (Bid-2)	2	2.11
Odd Lot Quote Size (Bid-2)	1	2

Odd lot Quote Participant ID (Offer-1)	1	H
Odd Lot Quote Price (Offer-1)	2	2.17
Odd Lot Quote Size (Offer-1)	1	2
Odd lot Quote Participant ID (Offer-2)	1	H
Odd Lot Quote Price (Offer-2)	2	2.18
Odd Lot Quote Size (Offer-2)	1	3
Odd Lot Best Bid Participant ID (BOLO-Bid)	1	H
Odd Lot Best Bid Quote Price (BOLO-Bid)	8	2.12
Odd Lot Best Bid Quote Size (BOLO-Bid)	1	2
Odd Lot FINRA Best Bid Market Maker ID	4	
Odd Lot Best Bid Participant ID (BOLO-Offer)	1	H
Odd Lot Best Bid Quote Price (BOLO-Offer)	8	2.17
Odd Lot Best Bid Quote Size (BOLO-Offer)	1	2
Odd Lot FINRA Best Bid Market Maker ID	4	

Remaining Odd lot quotes after this update:

- Bid (Participant ID H): 2x2.12
- Bid (Participant ID P): 2x2.11
- Offer (Participant ID H): 2x2.17
- Offer (Participant ID H): 3x2.18

BOLO: 2x2.12 (H) - 2x2.17 (H)

NBBO: 500x2.11(N) - 100x2.18 (H)

3.1.5 CTA publishes updates for the symbol via Round Lot Long Quote which includes odd lot quotes via the Odd Lot Extended Quote Appendage on the message. Message includes NBBO appendage, no BOLO appendage is included.

1. Round Lot Quote (Participant in H): 300x2.12 - 100x2.18
2. NBBO Appendage ('National BBO Indicator' = U)
3. 2 Odd Lot Extended Quote Appendage for bid ('Count of Odd Lot Offer appendages'=2):
 - a. Bid (Participant ID P): 0x2.11 (clear previous Bid)
 - b. Bid (Participant ID H): 3x2.12 (size update for previous bid)
4. No BOLO Appendage ('BOLO Indicator' = I, i.e., No odd lot best bid and no odd lot best offer change)

Field Name	Field Length	Field Value
Message Length	2	133
Message Category	1	Q
Message Type	1	K
Participant ID	1	H
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321

Security Symbol	11	XYZ
Quote Condition	1	R
Security Status Indicator	1	
Round Lot Bid Price / Lower Limit Price Band	8	2.12
Round Lot Bid Size	4	300
Round Lot Offer Price / Upper Limit Price Band	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Short Sale Restriction Indicator	1	
Primary Listing Market Participant ID	1	N
SIP Generated Message Identifier	1	
Limit Up-Limit Down (LULD) Indicator	1	
National BBO LULD Indicator	1	
National BBO Indicator	1	U
BOLO Indicator	1	I
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	2
Count of Odd Lot Offer appendages	1	0
Best Bid Participant ID (NBBO-Bid)	1	H
Best Bid Quote Condition (NBBO-Bid)	1	R
Best Bid Price (NBBO-Bid)	8	2.12
Best Bid Size (NBBO-Bid)	4	300
FINRA Best Bid Market Maker ID (NBBO-Bid)	1	
Best Offer Participant ID (NBBO-Offer)	1	N
Best Offer Quote Condition (NBBO-Offer)	1	R
Best Offer Price (NBBO-Offer)	8	2.18
Best Offer Size (NBBO-Offer)	4	100
FINRA Best Offer Market Maker ID (NBBO-Offer)	1	
Odd lot Quote Participant ID (Bid-1)	1	P
Odd Lot Quote Price (Bid-1)	8	2.11
Odd Lot Quote Size (Bid-1)	1	0
Odd Lot FINRA Market Maker ID (Bid-1)	4	
Odd lot Quote Participant ID (Bid-2)	1	H
Odd Lot Quote Price (Bid-2)	8	2.12
Odd Lot Quote Size (Bid-2)	1	3
Odd Lot FINRA Market Maker ID (Bid-2)	4	

Remaining Odd lot quotes after this update:

- Bid (Participant ID H): 3x2.12
- Offer (Participant ID H): 2x2.17
- Offer (Participant ID H): 3x2.18

BOLO: 0 - 2x2.17 (H) - *Best Bid for BOLO is zero since there is no odd lot quote at a price higher than National Best bid*

NBBO: 300x2.12(H) - 100x2.18 (N)

3.1.6 CTA publishes updates for the symbol via an Odd Lot Long Quote (Category Q Type M) which includes:

1. 1 Odd Lot Short Quote Appendage for bids ('Count of Odd Lot Bid appendages' = 1) :
 - a. Bid (Participant ID P): 3x2.12
2. 1 Odd Lot Short Quote Appendage for offer ('Count of Odd Lot Offer appendages' = 1) :
 - a. Offer (Participant ID N): 2x2.18
3. No BOLO appendages ('BOLO Indicator' = I, i.e., No odd lot best bid and no odd lot best offer change)

Note - Participant ID in the message header does not correspond to the odd lot quotes, Participant ID for each odd lot quote is identified within each odd lot quote appendage

Field Name	Field Length	Field Value
Message Length	2	61
Message Category	1	Q
Message Type	1	M
Participant ID	1	S
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321
Security Symbol	11	XYZ
BOLO Indicator	1	I
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	2
Count of Odd Lot Offer appendages	1	2
Odd lot Quote Participant ID (Bid-1)	1	P
Odd Lot Quote Price (Bid-1)	8	2.12
Odd Lot Quote Size (Bid-1)	1	3
Odd lot Quote Participant ID (Offer-1)	1	N
Odd Lot Quote Price (Offer-1)	8	2.18
Odd Lot Quote Size (Offer-1)	1	2

Odd lot quotes after this update:

- Bid (Participant ID H): 2x2.12
- Bid (Participant ID P): 3x2.12
- Offer (Participant ID H): 2x2.17
- Offer (Participant ID H): 3x2.18
- Offer (Participant ID N): 2x2.18

BOLO: 0 - 2x2.17 (H)

NBBO: 300x2.12(H) - 100x2.18 (N)

3.1.7 CTA publishes another Round Lot Long Quote for the symbol while there are no odd lot quotes to report. Message includes NBBO and BOLO appendages

1. Round Lot Quote (Participant in H): 100x2.11 - 100x2.18
2. NBBO Appendage ('National BBO Indicator' = U)
3. No odd lot quote appendages
4. BOLO Bid Appendage ('BOLO Indicator' = N, BOLO offer appendage is not included, no change to Best Odd Lot Offer)

Field Name	Field Length	Field Value
Message Length	2	133
Message Category	1	Q
Message Type	1	K
Participant ID	1	H
Timestamp 1	8	1234567890
Message ID	1	1
Transaction ID	4	12345678
Participant Reference Number	8	87654321
Security Symbol	11	XYZ
Quote Condition	1	R
Security Status Indicator	1	
Round Lot Bid Price / Lower Limit Price Band	8	2.11
Round Lot Bid Size	4	100
Round Lot Offer Price / Upper Limit Price Band	8	2.18
Round Lot Offer Size	4	100
Retail Interest Indicator	1	A
Settlement Condition	1	
Market Condition	1	
FINRA Market Maker ID	4	
FINRA BBO Indicator	1	
Timestamp 2	8	0
Short Sale Restriction Indicator	1	
Primary Listing Market Participant ID	1	N
SIP Generated Message Identifier	1	
Limit Up-Limit Down (LULD) Indicator	1	

National BBO LULD Indicator	1	
National BBO Indicator	1	U
BOLO Indicator	1	N
Clear Prior Odd Lot Quotes	1	
Count of Odd Lot Bid appendages	1	3
Count of Odd Lot Offer appendages	1	1
Best Bid Participant ID (NBBO-Bid)	1	N
Best Bid Quote Condition (NBBO-Bid)	1	R
Best Bid Price (NBBO-Bid)	8	2.11
Best Bid Size (NBBO-Bid)	4	500
FINRA Best Bid Market Maker ID (NBBO-Bid)	1	
Best Offer Participant ID (NBBO-Offer)	1	N
Best Offer Quote Condition (NBBO-Offer)	1	R
Best Offer Price (NBBO-Offer)	8	2.18
Best Offer Size (NBBO-Offer)	4	100
FINRA Best Offer Market Maker ID (NBBO-Offer)	1	
Odd Lot Best Bid Participant ID (BOLO-Bid)	1	P
Odd Lot Best Bid Quote Price (BOLO-Bid)	8	2.12
Odd Lot Best Bid Quote Size (BOLO-Bid)	1	3
Odd Lot FINRA Best Bid Market Maker ID (BOLO-	4	

Odd lot quotes are not affected:

- Bid (Participant ID H): 2x2.12
- Bid (Participant ID P): 3x2.12
- Offer (Participant ID H): 2x2.17
- Offer (Participant ID H): 3x2.18
- Offer (Participant ID N): 2x2.18

BOLO: 2x2.12(H) - 2x2.17 (H)

NBBO: 500x2.11(N) - 100X2.18 (N)