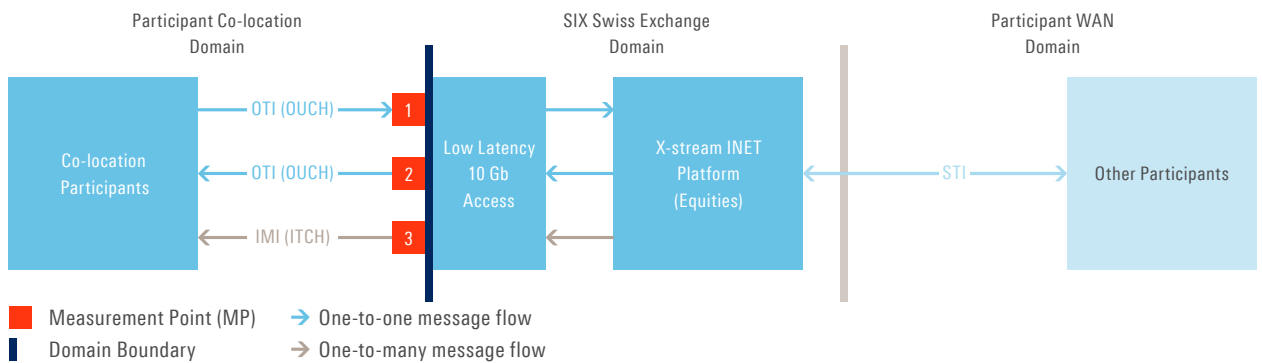


# Excellent Latency and Capacity

## X-stream INET Performance Measurement Details for Equities Partition

The SIX Swiss Exchange trading platform sets new latency and capacity standards. With X-stream INET, a platform provided by Nasdaq OMX, customers benefit from latency of 14 microseconds. The X-stream INET Latency has been measured with a production configuration. The measurements have been made with Corvil on the 10 GBits co-location direct link outside the SIX Swiss Exchange boundary. The diagram below defines the 3 measurement points (MP).



### OUCH Trading Interface (OTI) Latency

The OUCH trading interface latency is the full roundtrip from the SIX Swiss Exchange network domain boundary to the matching engine and back. This includes the time it takes to validate, process, and acknowledge or fill a participant order. The latency is the time difference between the measurement points MP1 and MP2.

### ITCH Market Data Interface (IMI) Latency

The ITCH market data interface latency is the full roundtrip from the SIX Swiss Exchange network domain boundary to the matching engine and back. This includes the time it takes to validate, process the OTI message that triggers an IMI output, and the time to disseminate the IMI market data change message using the MoldUDP broadcast protocol. The latency is the time difference between the measurement points MP1 and MP3.

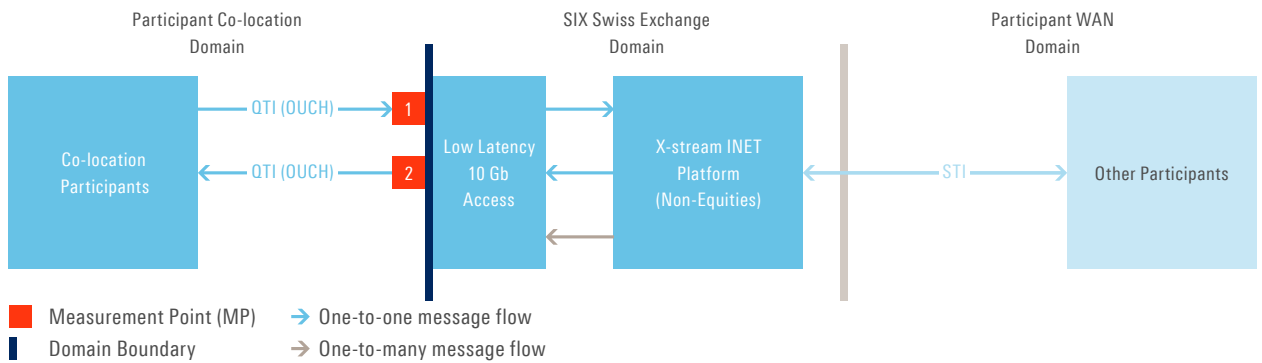
### Test Result – Mixed OUCH and STI order flow

Latency	OUCH Trading Interface	ITCH Market Data Interface
Average	14 microseconds	13 microseconds
99% within	25 microseconds	24 microseconds
99.9% within	29 microseconds	28 microseconds

20,000 OTI orders per second from 55 clients  
 150 STI FIX order per second from 5 clients  
 60 Trades per second

# X-stream INET Performance Measurement Details for Non-Equities Partition

The X-stream INET Latency figures provided for the Non-Equities Partition are measured with the following configuration. The measurements are made with Corvil on the 10 GBits co-location direct link outside the SIX Swiss Exchange boundary. The diagram below defines the 2 measurement points (MP).



## Interface definitions

### OTI (OUCH Trading Interface)

OTI provides a standard OUCH message protocol order management interface. OUCH is the de facto industry standard for High Frequency Trading. Each OUCH input message generates one OTI output acknowledgement message back to the initiating party. Where there is a resulting match from the OUCH input message, additional OUCH messages are generated to the counterparties to the trades. For the test scenarios, with low trade to order ratios, the OUCH output message count is proximate to the OUCH input message count.

### QTI (Quote Trading Interface)

The Quote Trading Interface (QTI) enables market makers direct access to the order book. It supports the entry of quotes and receives execution confirmations for further processing.

### IMI (ITCH Market Data Interface)

IMI provides a standard ITCH message protocol market data feed. ITCH is the de facto industry standard for High Frequency Trading. Where no matching occurs, one ITCH output is generated for each input OUCH message to notify the resulting change to the order book. Where there is a resulting match, several ITCH messages can be generated to report the trades to the market and the order book changes. ITCH messages are sent to many parties, typically via broadcast protocols. For the test scenarios, with low trade to order ratios, the ITCH output message count is proximate to the OUCH input message count, albeit that these are typically broadcast to many receiving parties.

### STI (Standard Trading Interface)

STI is the SIX Swiss Exchange legacy FIX order management interface. STI messages are processed by a front-end FIX gateway where they are translated into X-stream proprietary AMP support is provided to ensure backward compatibility with existing participant systems.