

MIT 701 - CONNECTIVITY SPECIFICATION TAH MARKET

Issue 2.1

OCTOBER 2021

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1. INTRODUCTION

Following the acquisition of MillenniumIT, the Borsa Italiana is embarking on a programme of change that will see BIT Cash Markets migrate from the current TradElect and Affari trading platforms to Millennium Exchange – the multi-asset class, ultra-low latency platform of MillenniumIT.

The first phase of this transition will be the migration of the TAH market and in a second phase all the other BIT Cash Markets (MTA, MIV, EGM, MAC, ETFplus, MOT, ExtraMOT, SeDeX).

It is anticipated that this will require participants to make a number of technical changes to their existing trading systems.

1.1. Purpose

The purpose of this document is to provide a technical description about the connectivity to TAH Market on the Millennium Exchange platform.

1.2. Readership

This document outlines how to connect to the MIT Trading System.

When read in conjunction with the other Millennium Exchange guides, it is intended that these documents provide all of the details directly connected Borsa Italiana customers require to develop to the new services.

1.3. Document series

This document is part of series of documents providing a holistic view of full trading and information services available from Borsa Italiana post the migration to Millennium Exchange.

The current series of documents are set out below:

Trading

- MIT201 BIT – Guide to New Trading System
- MIT202 BIT – FIX Trading Gateway (FIX 5.0)
- MIT203 BIT – Native Trading Gateway Specification
- MIT204 BIT – Post Trade Gateway (FIX 5.0) Specification

- MIT205 BIT – Drop Copy Gateway (FIX 5.0) Specification

Market Data

- MIT301 BIT – Guide to Market Data Services
- MIT303 BIT – MITCH Specification
- MIT305 BIT – Markets Reference Data
- MIT306 BIT – MOT / EuroMOT Instrument Currency

Connectivity

- **MIT701 BIT – Connectivity Specifications TAH (this document)**

This series principally covers non-regulatory information and does not override or supersede the Rules of Borsa Italiana.

The latest version of this document series can be found at the following links:

Italian Version:

<http://www.borsaitaliana.it/borsaitaliana/intermediari/gestione-mercati/migrazionemillenniumit-mit/millenniumitmigration.htm>

English Version:

<http://www.borsaitaliana.it/borsaitaliana/intermediari/gestione-mercati/migrazionemillenniumit-mit/millenniumitmigration.en.htm>

1.4. Purpose

The purpose of this document is to provide a technical description about the connectivity to TAH Market on the Millennium Exchange platform.

1.5. Document history

This document has been through the follow iterations:

Issue	Date	Description
1.0	April 2012	First issue of this document published via the Borsa Italiana's website and distributed to customers.
1.1	April 2012	Correction in MITCH addresses for Feed A
1.2	October 2014	Updated version of this document published via the Borsa Italiana's website and distributed to customers. Changes are applied in the following sections: 1.3, 2.3.1
1.3	March 2017	Added paragraph 2.8 – tcp responder and heartbeat generator service availability
2.0	September 2020	Added sftp connectivity details
2.1	October 2021	Update after rebranding of Borsa markets

In subsequent issues, where amendments have been made to the previous version, these changes will be identified using a series of side bars as illustrated opposite.

1.6. Enquiries

Please contact either Client Technology Services or your Customer Relationship Manager if you have any functional questions about the Millennium Exchange services outlined in this document. Client Technology Services (ITA) can be contacted at:

Client Support

- Toll Free: 0080026772000
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Customer Relationship Management Technology

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2. CONNECTIVITY

2.1. Production IP addresses and ports

The IP addresses and ports are listed in the following sections.

2.1.1. Trading After Hours

Primary Data Centre

Exchange Gateway (Trading) Services		
Service	Customer Information	
	Exchange IP Address	TCP Port
Fix Trading GW 01 - Channel 1	194.169.10.8	57351
Fix Trading GW 01 - Channel 1 Alternate	194.169.10.9	57351
Fix Trading GW 01 - Channel 2	194.169.10.8	57352
Fix Trading GW 01 Channel 2 - Alternate	194.169.10.9	57352
Native Trading 01	194.169.10.56	57701
Native Trading 02	194.169.10.57	57701
Native Trading 01 Recovery	194.169.10.56	57902
Native Trading 02 Recovery	194.169.10.57	57902
Post Trade Router 01 - Channel 1	194.169.10.24	57450
Post Trade Router 01 - Channel 1 Alternate	194.169.10.25	57450
Post Trade Router 01 - Channel 2	194.169.10.24	57451
Post Trade Router 01 -Channel 2 Alternate	194.169.10.25	57451
Drop Copy 01 - Channel 1	194.169.10.40	57550
Drop Copy 01 - Channel 1 Alternate	194.169.10.41	57550
Drop Copy 01 - Channel 2	194.169.10.40	57551
Drop Copy 01 - Channel 2 Alternate	194.169.10.41	57551

Secondary Data Centre

Exchange Gateway (Trading) Services		
Service	Customer Information	
	Exchange IP Address	TCP Port
Fix Trading GW 02 - Channel 1	194.169.12.8	57351
Fix Trading GW 02 - Channel 1 Alternate	194.169.12.9	57351
Fix Trading GW 02 - Channel 2	194.169.12.8	57352
Fix Trading GW 02 Channel 2 - Alternate	194.169.12.9	57352
Native Trading 03	194.169.12.56	57701
Native Trading 04	194.169.12.57	57701
Native Trading 03 Recovery	194.169.12.56	57902
Native Trading 04 Recovery	194.169.12.57	57902
Post Trade Router 02 - Channel 1	194.169.12.24	57450
Post Trade Router 02 - Channel 1 Alternate	194.169.12.25	57450
Post Trade Router 02 - Channel 2	194.169.12.24	57451
Post Trade Router 02 -Channel 2 Alternate	194.169.12.25	57451
Drop Copy 02 - Channel 1	194.169.12.40	57550
Drop Copy 02 - Channel 1 Alternate	194.169.12.41	57550
Drop Copy 02 - Channel 2	194.169.12.40	57551
Drop Copy 02 - Channel 2 Alternate	194.169.12.41	57551

2.2. Connection configuration

A member firm connection will be configured by the Exchange to connect to a specific IP address and port of the primary data centre.

In case of unavailability, customer should try connection to another specific address associated to the CompID. This address could be in the primary or in the secondary data centre.

For the purpose of redundancy, the service supports the configuration of multiple connections to send the same information on the activity of the selected firms/trader groups.

2.3. FIX Session

The interface is a point-to-point service based on the technology and industry standards TCP/IP, FIXT and FIX. The session and application event models and messages are based on versions 1.1 and 5.0 (Service Pack 2) of the FIXT and FIX protocols respectively.

2.3.1. FIX failover and recovery

The MIT Trading system has been designed with fault tolerance and disaster recovery technology that ensures that trading should continue in the unlikely event of a process or gateway outage.

For load balance purposes, customer will be split in two different groups connecting two different combination of IP address and port. These information will be provided to customers along with each CompID.

Considering customers split in group A and group B, where group A is required to connect to:

Fix Trading GW 01 - Channel 1 → 194.169.10.8 port 57351

and group B is required to connect to

Fix Trading GW 01 - Channel 2 → 194.169.10.8 port 57352

If group CompIDs in group A lost connection with the gateway, they need to try connection on the alternate channel

Fix Trading GW 01 - Channel 1 Alternate → 194.169.10.9 port 57351

If group CompIDs in group B lost connection with the gateway, they need to try connection on the alternate channel

Fix Trading GW 01 - Channel 2 Alternate → 194.169.10.9 port 57352

In this case it is important to note that the system will increment the server side outbound sequence number (i.e. Client's inbound sequence) by 5000.

Since the client needs to comply with FIX Session rules, the client should submit a Resend Request after receiving a response to the login request. This would result in syncing the inbound sequence number on client side.

In this scenario, the client might receive duplicate messages (i.e. messages the client has already received before the Fail-over - low probability). All these duplicate messages will have PossResend(97) field set to "Y".

It is expected for the client to perform a check for duplicate messages with PossResend(97) set "Y". Therefore if the client had already received Acknowledgements for messages with those Client Order IDs, client should ignore these Rejects.

The client might receive Business Rejects with reject reason 'Application not Available' for requests that were submitted during a failover (low probability). It should be noted that these requests have not been accepted by the System and Client should decide on whether to re-submit them or not.

If also alternate channels are not working, customers are required to connect to the Secondary Data Centre again using two different addresses/ports between group A and B.

In this case the server side inbound and outbound sequence numbers are reset and therefore the sequence number sent out by client should also be reset.

Group A

Fix Trading GW 02 - Channel 1 → 194.169.12.8 port 57351

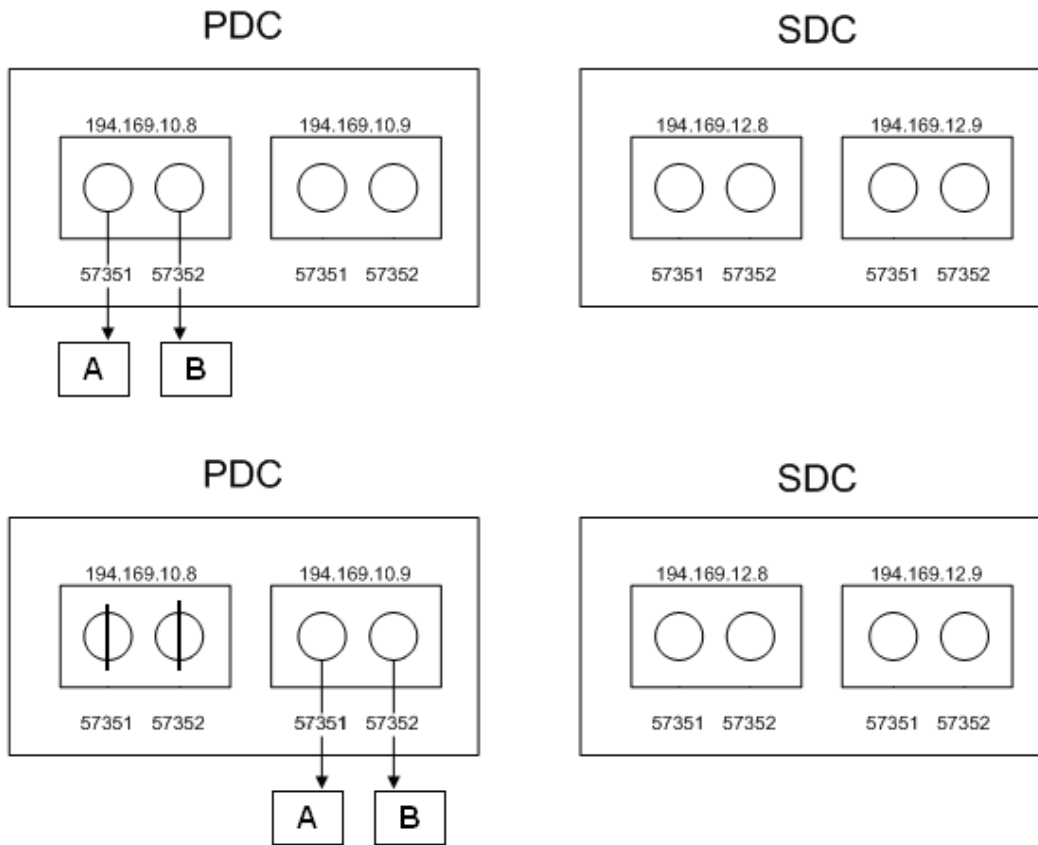
Group B

Fix Trading GW 02 - Channel 2 → 194.169.12.8 port 57352

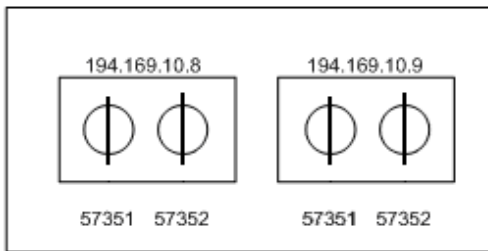
This behavior should be implemented for connections to

- FIX Trading Gateway
- Drop Copy Gateway
- Post Trade Gateway

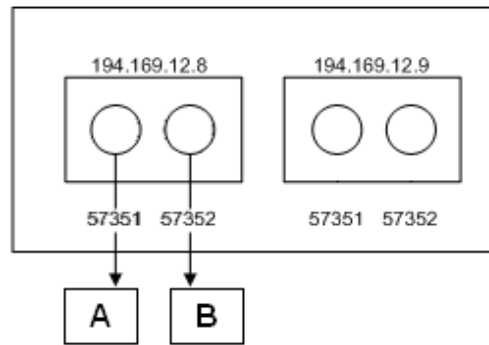
Please find below a simple diagram about the sequence.



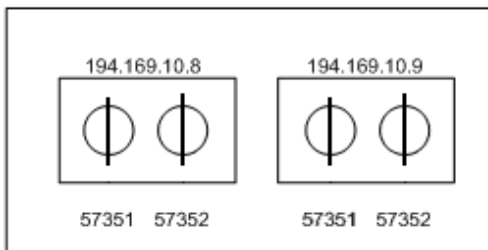
PDC



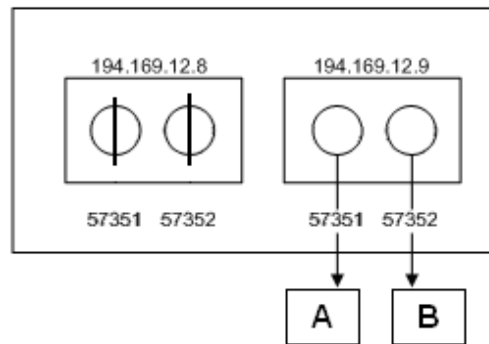
SDC



PDC



SDC



2.4. Native Session

The User will be confirmed with each client before communications can begin through the Native Trading Gateway. A single client may have multiple connections to the server (i.e. a user can maintain multiple sessions if he has multiple UserIDs).

Each client will use the assigned IP address and port to establish a TCP/IP session with the server. The client will initiate a session at the start of each trading day by sending the Logon message.

2.4.1. Failover and recovery

The system has been designed with fault tolerance and disaster recovery technology that ensures that trading should continue in the unlikely event of a process or site outage.

On unexpected disconnection from the primary gateway a client should try to reconnect three times to the primary gateway with a time out value of three seconds on each connection before attempting to connect to the secondary gateway – and this should then be retried a further 3 times. After six failed connection attempts (3 on each gateway) the client should contact the Exchange for guidance.

Customers will be split in two groups (A and B), each group connecting to a specific channel.

Group A:

Native Trading 01 → 194.169.10.56 port 57701

Group B:

Native Trading 02 → 194.169.10.57 port 57701

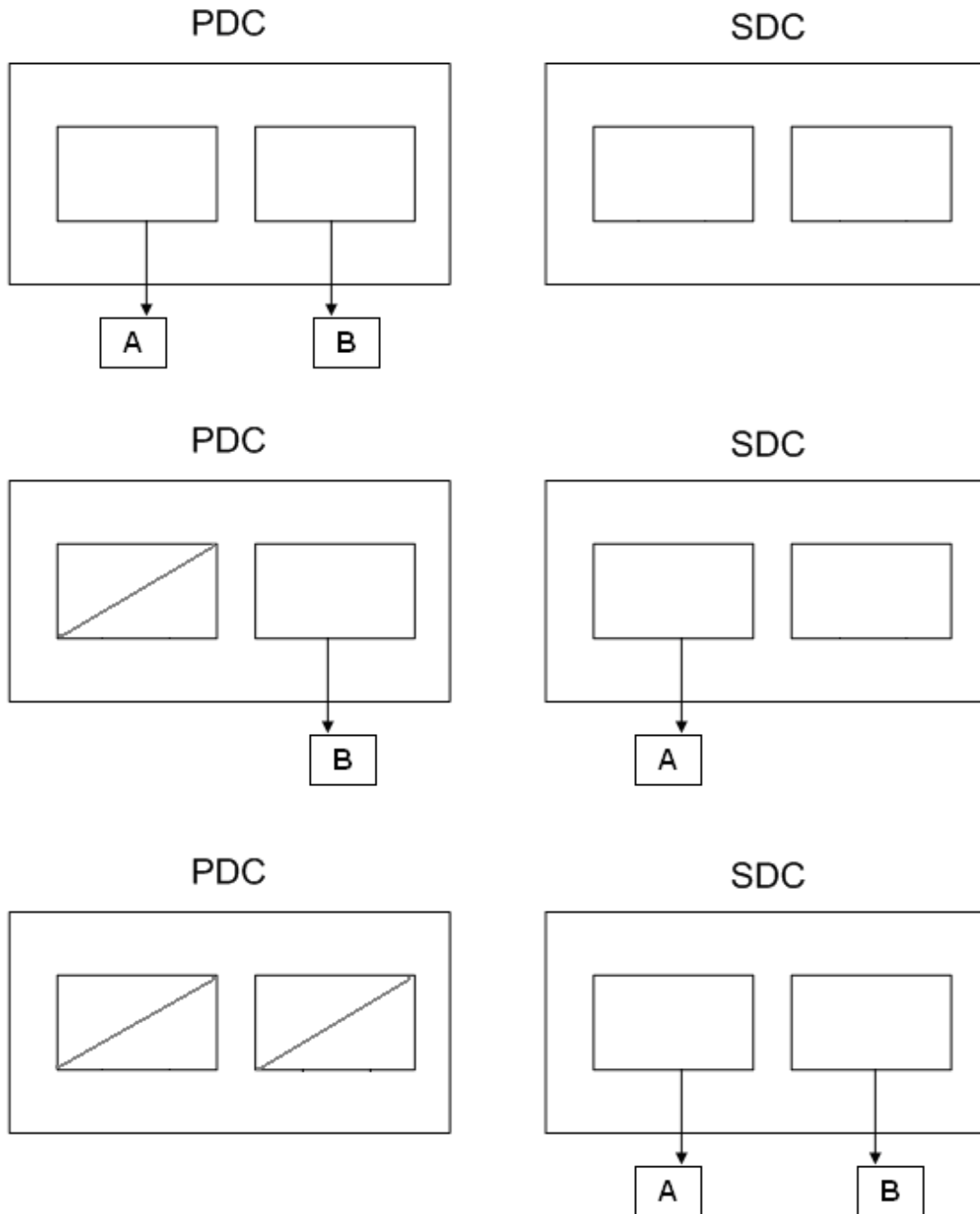
If CompIDs in group A lost the connection to the gateway they are required to connect to

Native Trading 03 → 194.169.12.56 port 57701

If CompIDs in group B lost the connection to the gateway they are required to connect to

Native Trading 04 → 194.169.12.57 port 57701

Find below a simple diagram about this behaviour.



2.5. FTP/SFTP Reference Data

MIT 305 and 306

Reference data will be available in PRODUCTION environment for all customers upon ftp or sftp connection to the server

- **PDC:**
 - 81.174.64.61
 - 81.174.64.62
- **SDC:**
 - 81.174.64.189

Standard username and password available for the connection are

- User: trm2USER
- Pw: F1les4You

2.6. Connectivity test

In order to facilitate connectivity tests a tcp responder and heartbeat generator service is available on Millennium IT platform out of market hours.

The connectivity service (response to TCP telnet and multicast heartbeats generators) is available for BIT TAH market:

- Every day of the week (week end included) between 9 pm CET and 11 pm CET
- From 9 pm CET on Saturday to 11 pm CET on Sunday

The Multicast Groups for TAH Market is available (both A and B feed).

The TPC gateway for TAH Market is also available (both PDC and SDC).

Please note that login **will not be available (only telnet)**.

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