



**London**  
Stock Exchange Group

# LONDON STOCK EXCHANGE GROUP

## GROUP TICKER PLANT

### GTP 007 - GTP LITE GUIDE

ISSUE 4.0  
29 JULY 2014

Powered by  
MillenniumIT



One product, **infinite possibilities.**

## Contents

<b>Guide Disclaimer .....</b>	<b>3</b>
<b>1. Documentation .....</b>	<b>4</b>
1.1 This Guide .....	4
1.2 Readership .....	4
1.3 Document Series .....	4
1.4 Document History .....	4
1.5 Enquiries.....	5
<b>2. Service Overview.....</b>	<b>6</b>
2.1 Data Sets.....	6
<b>3. System Overview.....</b>	<b>8</b>
3.1 Architecture and subscription.....	8
3.2 Connectivity .....	8
<b>4. Message Formats .....</b>	<b>9</b>
4.1 Message Compression and Composition.....	9
4.2 Message Sequencing .....	9
<b>5. Client Data Recovery .....</b>	<b>10</b>
<b>6. Product Failure .....</b>	<b>11</b>

## Guide Disclaimer

The content of this publication is not offered as advice on any particular matter and must not be treated as a substitute for specific advice. In particular, information in this publication does not constitute professional, financial or investment advice and must not be used as a basis for making investment decisions and is in no way intended, directly or indirectly as an attempt to market or sell any type of financial instrument. London Stock Exchange Group plc. and its group undertakings (the “London Stock Exchange Group”) attempts to ensure that all information used in this publication is accurate at the time of publication, however all information is provided “as is” and on an “as available” basis and may not be accurate or up to date and the London Stock Exchange Group shall not be liable for decisions made in reliance on it. The information provided by the London Stock Exchange Group may or may not have been prepared by the London Stock Exchange Group but is made available without responsibility on the part of the London Stock Exchange Group. No responsibility is accepted by or on behalf of the London Stock Exchange Group for any errors, omissions, or inaccurate information. The London Stock Exchange Group does not make any representations and disclaims all express, implied and statutory warranties of any kind, including warranties as to accuracy, timeliness, completeness, merchantability or fitness for any particular purpose. Except as is otherwise indicated, the London Stock Exchange Group is the owner of the copyright in all the information and of all related intellectual property rights, including but not limited to all database rights, trade marks, service marks and logos.

Whilst this document may be updated at any time, the London Stock Exchange Group will endeavor to provide notice to customers of changes being made. This notice, however, cannot always be guaranteed. The information in this publication is therefore for guidance only.

For further information, please contact your usual London Stock Exchange Group contact.

## 1. Documentation

### 1.1 This Guide

The purpose of this document is to provide an overview of the GTP Lite services underpinned by the Group Ticker Plant service lines.

It will be updated and reissued when appropriate to do so.

### 1.2 Readership

This document is particularly relevant to trading, market data and technical teams within member firms, information vendors and other market participants who currently receive or are interested in receiving Borsa Italiana market data and who are based in Italy.

When read in conjunction with other Group Ticker Plant documents it is intended to provide all required information to develop to, and interact with, our GTP Lite real-time information systems.

### 1.3 Document Series

This guide, **GTP007 – GTP Lite Guide**, forms part of the documentation library supporting those clients interacting with the Group Ticker Plant. For information, the full series of currently available documentation is outlined below:

- GTP001 – Product Guide (this document);
- GTP002 – Technical Guide;
- GTP003 – Statistics Guide;
- GTP004 – Parameters Guide
- GTP005 – Testing Guide;
- GTP006 – External Sources Guide;
- GTP007 – GTP Lite Guide (this document)..

Further documentation to may be released in due course.

The full library of Group Ticker Plant documentation can be found at:

[www.londonstockexchange.com/oneproductinfinitepossibilities](http://www.londonstockexchange.com/oneproductinfinitepossibilities)

### 1.4 Document History

This document has been subject to the following iterations:

Issue	Date	Description
1.0	29 January 2014	First issue of this document
2.0	06 March 2014	Second issue of this document to reflect the launch of the Level 2 full-depth

		incremental GTP Lite Service.
3.0	17 April 2014	Updates as highlighted.
4.0	29 July 2014	Minor clarification as highlighted.

In subsequent issues of this document, where amendments have been made, these changes will be indicated through the use of **red text** and sidebars (example left).

## 1.5 Enquiries

For further information on Group Ticker Plant, please contact your Technical Account Manager or Clients Technology Services (Italy):

- Telephone: (+39) 02 42 41 13 99
- Telephone (Toll Free): (00800) 26 77 20 00
- Email: [clients-services@borsaitaliana.it](mailto:clients-services@borsaitaliana.it)

Further information can also be found on our project websites:

[www.londonstockexchange.com/oneproductinfinitepossibilities](http://www.londonstockexchange.com/oneproductinfinitepossibilities)

[www.borsaitaliana.it/oneproductinfinitepossibilities](http://www.borsaitaliana.it/oneproductinfinitepossibilities)

## 2. Service Overview

The first tranche of Group Ticker Plant services were launched in late 2012. Whilst these services have become popular with the Group's Members, Information Vendors and ISVs based in London, the bandwidth requirement to support these services has proven to be a significant barrier for the Italian data community.

The Group reviewed our approach to data provision in Italy and approached MillenniumIT, the developers responsible for the core Group Ticker Plant technology, to build a secondary solution available for customers connected directly to the Group's core technology, requiring rich functionality but with limited connection capacity available.

Throughout 2013 the Group has worked to finalise the details of these services: the GTP Lite services. GTP Lite will broadcast in a compressed binary format, based on TCP transmission and will operate on limited circuit capacities. Whilst GTP Lite is not a subscription service, it will, however, deliver a rich suite of functionality but is not advised for those customers who are latency and performance sensitive.

GTP Lite will only be made available to Italy based customers and will only be supported on the Italian Group Ticker Plant Production instance. It is considered by the Group to be the long term replacement of MDF/DDM-Plus and all current subscribers are required to migrate to the GTP Lite product suite when appropriate to do so. The Group currently has no plans to offer the GTP Lite service on the London Group Ticker Plant Production instance.

Any customer requiring guidance on the most appropriate Group Ticker Plant product to support their market data needs should contact their Technical Account Manager in either London or Milan.

### 2.1 Data Sets

The first iteration of GTP Lite services will be launched to support the Group Ticker Plant Phase 1.0 services in TCP format. At go-live, GTP Lite will deliver the following service lines:

- Level 1 incremental service;
- Level 2 10 depth snapshot service;
- Level 2 full depth incremental service;
- Reference Data;
- Announcements;
- FTSE indices;



**Figure 1:** Service lines offered by the GTP Lite service at go-live.

Further information on the structure, including the functionality and design of these services, can be found in GTP001 – Product Guide.

The following markets will be supported at the go-live of GTP Lite:

- Borsa Italiana Cash Equity markets (MTA, SeDex and ETFs);
- Borsa Italiana Derivatives markets (IDEM);
- Borsa Italiana Fixed Income markets (MOT);
- EuroTLX markets (ETLX).

## 3. System Overview

### 3.1 Architecture and subscription

The GTP Lite architecture has been designed to be scalable and resilient. The GTP Lite services will be housed on the same architecture as the Group Ticker Plant core services, leveraging the identical upstream architecture, including existing feed handlers and databases. The provisioned Group Ticker Plant replay and recovery solutions, used by customers recovering from message loss, outage or late join, will be provided to customers of the GTP Lite service.

Customers are required to establish a TCP session with the gateway and login to the service. In a similar approach to the core Group Ticker Plant service lines, customers will not be permitted to subscribe to a subset of instruments or messages on the supporting gateway.

Login to the GTP Lite services is done through the Login Request message, as detailed in section 3.9.1 of GTP002 – Technical Guide. Following successful login, validation of an active TCP session is done through the standard TCP ‘keep-alive’ mechanism. No explicit unsubscription from the GTP Lite service is required and closing the TCP session will disconnect customers from the GTP Lite service. **Customers should note that no Heartbeat messages are sent on the GTP Lite service, and instead customers should use the TCP ‘keep-alive’ mechanism during periods of inactivity.**

Customers should note, however, that no secondary market data service will be provided to customers using the GTP Lite service. Unlike the multicast services, whereby a secondary feed is routed on customer’s resilient circuit, only a primary service, provisioned on a customer’s primary circuit will be permitted for GTP Lite users during normal service. In the unlikely event of component failure, a secondary GTP Lite service will be made available for subscription on customers’ secondary circuit.

### 3.2 Connectivity

The GTP Lite service employs industry standard data delivery and recovery transmission techniques.

The GTP Lite service will use TCP over IP version 4 (IPv4) Ethernet standards. TCP Header information is defined in IETF RFC 793 standard and IPv4 is defined in the RFC791 standard. Further information is contained in section 2 of GTP002 – Technical Guide.

Customers should note that network topology information, including IP unicast addresses and port details, will be published in GTP004 – Parameters Guide, shortly.



## 4. Message Formats

The GTP Lite services will deliver the same data as that of the core Group Ticker Plant services. The real-time data messages delivered by the GTP Lite service, whilst compressed to ensure the most efficient delivery, will be delivered in the same format as the core Group Ticker Plant service. All message formats, including uncompressed message length and data types, are contained within section 3 of GTP002 – Technical Guide.

### 4.1 Message Compression and Composition

All messages disseminated on the GTP Lite market data service will be compressed to ensure the most efficient possible data transmission. Compression will be done using the industry standard ‘z-lib’ library. To facilitate decompression, the message stream will be split into a series of data chunks – each chunk containing a number of compressed messages, as well as a delimiter and a message header.

The delimiter will contain an auto-generated unique number. Customers should note that this is not the sequence number of the message. The delimiter is followed by the chunk header, which will contain the total length of the messages in the chunk, both compressed and uncompressed – both of these values and the delimiter will be two bytes in length. The chunk header will then be followed by a number of compressed messages.



**Figure 2:** Structure of the GTP Lite message following compression

Customers should note that messages sent to logon to the GTP Lite service, and all messages sent to or sent from the replay and recovery solutions should be not be compressed.

### 4.2 Message Sequencing

All messages sent from the Group Ticker Plant service, including those transmitted on GTP Lite will be sequenced. GTP Lite messages will carry the identical sequence number to that of the corresponding Group Ticker Plant multicast service. Sequence numbers are not customer specific and are not, therefore, reset to 1 upon successful subscription to the GTP Lite service. Any customer subscribing to the GTP Lite service after messages have already begun disseminated should expect sequence numbers to be higher than 1.

## 5. Client Data Recovery

The Group Ticker Plant market data gateways, including those that support the GTP Lite services, provision TCP/IP data replay and recovery services to facilitate data recovery.

Unlike the core Group Ticker Plant market data services, the TCP nature of GTP Lite guarantees the receipt of each and every message disseminated on the GTP Lite channel. As such, whilst a replay service will be provisioned to customers, allowing them to rerequest a finite number of missed messages, they are not expected to have to connect to it.

The recovery service will also be provided to GTP Lite customers. The recovery service is provided to assist customers recovering from a large scale data loss or a late join to the market data services.

The recovery service allows customers to:

- request a snapshot of the order book for any active or inactive instrument in the Market Data Group. The snapshot will be either the MBP, MBO or level 1 service line dependent upon the recovery service targeted by the request;
- all trades reported for the trading day (both on and off book);
- a snapshot of the instrument's current statistics;
- the current trading status of an instrument;
- the full set of reference data for an instrument;
- announcements published by a venue on the target recovery service for a trading day.

The replay and recovery solutions provided to customers of the GTP Lite services are the same as those provided to customers of the core Group Ticker Plant service lines. As such, any customer with access to the replay or recovery solutions already provisioned to support Group Ticker Plant Production services will be able to use these login credentials to gain access.

Customers should use the existing library of TCP messages detailed in section 3.9 of GTP002 – Technical Guide to interact with either the replay or recovery solutions. Customers should note that whilst message sent to and received from the replay or recovery solutions will be in a TCP regime, no compression should or will be used.

Further information, including how to establish a connection to the replay and recovery services, how to request information to be sent and how to terminate a connection with either the replay or recovery service is detailed in section 4 of GTP002 – Technical Guide.

## 6. Product Failure

All Group Ticker Plant services, including GTP Lite and the core Group Ticker Plant services are designed to be robust and resilient. In the unlikely event of component failure, recovery has been designed to be transparent to customers wherever possible.

The local and remote resilience of GTP Lite components and service lines mirrors that of the core Group Ticker Plant multicast services.

As per section 3.1 of this document, GTP Lite will only be provided on a customer's primary circuit during normal operations. Should the primary market data gateway fail, the secondary market data gateway will become available for subscription to the GTP Lite service. The behaviour of the secondary gateway, including the reset of sequence numbers will mirror that of the core Group Ticker Plant multicast services. Further information is provided in section 5 of GTP002 – Technical Guide.



**London**  
Stock Exchange Group

**Copyright © July 2014 London Stock Exchange Group plc.  
Registered in England and Wales No. 5369106**

London Stock Exchange Group and the coat of arms device are registered trade marks of the London Stock Exchange plc. MillenniumIT is a registered trade mark of Millennium Information Technologies (Private) Limited.

London Stock Exchange Group  
10 Paternoster Square  
London  
EC4M 7LS

[www.lseg.com](http://www.lseg.com)