FTSE SERVICE MANAGEMENT

FTSE Distribution Interface
Russell Indices Overview

FTSE

Introduction

Management Summary

This document describes the main attributes of Russell Index data as provided through the FTSE Distribution Interface (FDI).

FDI is the means of accessing real time index data via the Global Distribution Service (GDS).

Objective of the Document

The prime objective of this document is to provide the reader with a technical overview of Russell Index service via FDI in order to inform development of client applications.

The intended audience comprise existing and new direct real time GDS clients.

Document Ownership

This document is owned by FTSE Service Management and all updates to this document will be applied by FTSE Service Management following internal agreement.

It is understood that this document is a living document and will be updated, following agreement by all relevant parties, as and when required.

Document History

Version	Author	Date	Description/Changes
0.1	Nathan Denison	10/03/2015	Draft for review
1.0	Nathan Denison	12/03/2015	Issued

FTSE Distribution Interface

The FTSE Distribution Interface offers a direct connection to the FTSE index calculation and distribution framework.

License

Under agreed license arrangements data may be distributed to third parties and/or used for internal purposes.

Bandwidth

Bandwidth requirements will vary depending on the index services to which clients subscribe. FTSE can provide details on the appropriate bandwidth requirements on request.

Distribution Servers

The FTSE system is supported through dual distribution servers for resilience.

There are no distinctions between the Primary and Secondary servers in terms of availability or data content and either may be used as a Production class data source.

Index Distribution Services

There are two types of service through which Russell Index data is distributed; Real Time (Pulse) and Close Only.

Real Time (Pulse) index updates are distributed at regular intervals whereas Close Only index updates are distributed once a day.

Index Prices

The index price values provided through the distribution system are sourced from a calculation system which is seamlessly aligned between the two distribution servers for resilience and consistency.

Index Tick Counts

The index tick count values provided through the distribution system are essentially the unique message number on intra-day message number on a per index basis.

For Real Time Indices each index tick count value is incremented from a start number of one (1) each new trade date under normal operational conditions though it should be noted however that it is possible for the tick count to commence at value in excess of one (1) in the rare event of an unscheduled late opening index.

For Close Only Indices each index tick count value is incremented from a start number of one (1) at the baseline date but then subsequently only reset annually.

Derived Data

Index high and low daily index values are not currently available directly from FTSE and clients should derive this data themselves from the intra-day index values.

Product Data Groups

The Product Data Group (PDG) is the grouping of indexes indices into logical units.

The PDG is the principle but not exclusive level used to request data through the FDI via subscription, it is also possible to subscribe at an individual index level.

FTSE Russell Index data is available in bespoke PDGs.

Index Attributes

Index Code

Index codes are used by FTSE to identify individual indices.

Index codes are not expected to ever exceed a maximum of twelve (12) characters however index codes can potentially be of any size between one (1) and fifty (50) alphanumeric characters in length and clients need to ensure that they can cater for this length of code.

Index Message Header

Index message headers will feature the fields as described in the following table.

Field	Format	Description
PDG/IndexCode	String	Product Data Group / Index Code
Tick	Numeric Integer	Tick Count
Replay	String	True or False

Index Message Body Fields

Index message bodies for Streaming Indices may feature any of the fields as described in the following table.

Field	Format	Description	Notes
TimeStamp	String	Time (UTC) of Index Message	HHMMSS
Status	String	Status Code of Index	See below
Currency	String	Currency of Index	ISO Code
PrevCloseDate	String	Previous Close Date of Index	YYYYMMDD
PrevClose	Float	Previous Close Index Value	6dp
LastValue	Float	Last Index Value	6dp
Change	Float	Previous Close Value to Last Value Change	6dp
Date	String	Trade Date of Session	YYYYMMDD
TickCount	Numeric	Tick Count for the Index	
SourceInterval	Numeric	Frequency of Index Messages	Seconds
IndexCode	String	Index Code	Unique
TotalReturnValue*	Float	Total Return Index Value	6dp
TRIChange*	Float	Previous Close TR Value to TR Value Change	6dp

*Total Return Value and TRIChange fields will only be available for those indices which disseminate a TR value.

Index Status Codes

Indices can exhibit any of the statuses as described in the following table.

Status	Description	Comment
N	Normal	Index open with firm constituent prices
I	Indicative	Index open with constituent price quality and/or availability not assured
H	Held	Operational exception for open index, for example price threshold breach
C	Closed	Index closed

It should be noted that an individual index constituent can also be the subject of various statuses, such as suspended or indicative, but this does not necessarily affect the status of the index as a whole.

Dissemination

Real Time Index (Pulse) Service

Real Time Indices output an index update message at a regular interval while open regardless of the underlying market activity.

The granularity of the updates for each index will be indicated by the **SourceInterval** field.

Close Only Index Service

Close Only Indices output an index update message at the end of the market as the constituent close values are confirmed and the index is calculated; typically within two hours of real time indices having closed.

Replay Service

The Replay facility for Real Time (Pulse) Indices represents the opportunity for subscribers to re-request missed ticks for the current day, e.g. as a result of a service outage for whatever reason.

If the requested data is available then it will be returned immediately however if the requested data is not available, for whatever reason, then nothing will be returned.

Replay requests are qualified by a start and end **TickCount** on a per index basis.

Notes:

- There is no facility for Replay requests outside of the **<u>current trade day</u>**.
- Replay functionality is **<u>not</u>** supported for Close Only indices however re-subscription to those indices would yield the latest values

Optimisation

On a per session basis no unchanged message body field is disseminated for an index which includes across trade date boundaries.

Also please note that Optimisation is only relevant to periods when the markets for the particular index are actually open, no data is disseminated as an update for an index when its underlying market are closed.

Subscription to a closed index would still yield an index update message featuring the last known values for all fields; please see the **Full Field Population** section for further information on Subscription messages.

Message Format

The generic message will be formatted as follows:

PDG/INDEXCODE:Tick=TICK, Replay=BOOLEAN, Fields=[FIELD_NAMEx=FIELD_VALUEx, FIELD_NAMEy=FIELD_VALUEy, FIELD_NAMEz=FIELD_VALUEz, etc…]

Key:

PDG	=	PDG
INDEXCODE	=	Index Code
TICK	=	TickCount Number
BOOLEAN	=	True or False
FIELD_NAME	=	Any of the relevant fields
FIELD_VALUE	=	Current value associated with relevant field

The PDG/INDEXCODE, Tick and Replay flag can be considered as the message Header; the Header attributes are not Optimised.

Full Field Population

There are two occasions when a fully populated message will be received without optimisation.

Subscription

At the time of user Subscription each index subscribed to returns a fully populated message with the current values in each field.

This includes for all constituent indices present in a subscription made at the PDG level.

Although subscription is anticipated to be made pre-market the same full field population would be observed should this be made intra-day.

Replay

A full populated message will be disseminated for each Replay message returned, i.e. on request of Ticks one through ten each message would be returned fully populated.

Example Messages

Real Time Subscription

Total Return Index

PDG01RR/RUS:Tick=4680, Replay=False, Fields=[Currency=USD, PrevCloseDate=20150306, PrevClose=1280.517802, LastValue=1288.912657, TimeStamp=210000, Date=20150309, Status=C, Change=8.394855, TickCount=4680, SourceInterval=5, IndexCode=RUS, TotalReturnValue=1223.592657, TRIChange=6.073145]

Non TR Index

PDG01RR/RUT:Tick=4680, Replay=False, Fields=[Currency=USD, PrevCloseDate=20150306, PrevClose=1220.517802, LastValue=1226.590947, TimeStamp=210000, Date=20150309, Status=C, Change=6.073145, TickCount=4680, SourceInterval=5, IndexCode=RUT]

Real Time Update (Tick 1)

Total Return Index

PDG01RR/RUS:Tick=1, Replay=False, Fields=[PrevCloseDate=20150305, PrevClose=1284.985108, LastValue=1278.334921, TimeStamp=143000, Date=20150306, Status=N, Change=-6.650187, TickCount=1, TotalReturnValue=1227.884920, TRIChange=-6.431551]

Non TR Index

PDG01RR/RUT:Tick=1, Replay=False, Fields=[PrevCloseDate=20150305, PrevClose=1234.311208, LastValue=1227.884920, TimeStamp=143000, Date=20150306, Status=N, Change=-10.718551, TickCount=1]

Real Time Update (Tick 2)

Total Return Index

PDG01RR/RUS:Tick=2, Replay=False, Fields=[LastValue=1278.123006, TimeStamp=143005, Change=-6.862102, TickCount=2, TotalReturnValue=1228.123006, TRIChange=-6.188202]

Non TR Index

PDG01RR/RUT:Tick=2, Replay=False, Fields=[LastValue=1228.123006, TimeStamp=143005, Change=-6.188202, TickCount=2]

Real Time Replay (Tick 2)

Total Return Index

PDG01RR/RUS:Tick=2, Replay=True, Fields=[Currency=USD, PrevCloseDate=20150305, PrevClose=1284.985108, LastValue=1278.123006, TimeStamp=143005, Date=20150306, Status=N, Change=-6.862102, TickCount=2, SourceInterval=5, IndexCode=RUS, TotalReturnValue=1228.123006, TRIChange=-6.188202]

Non TR Index

PDG01RR/RUT:Tick=2, Replay=True, Fields=[Currency=USD, PrevCloseDate=20150305, PrevClose=1234.311208, LastValue=1228.123006, TimeStamp=143005, Date=20150306, Status=N, Change=-6.862102, TickCount=2, SourceInterval=5, IndexCode=RUT]

Close Only Subscription

Total Return Index

PDG01RR/RUU:Tick=44, Replay=False, Fields=[Currency=USD, PrevCloseDate=20150306, PrevClose=1280.517802, LastValue=1288.912657, TimeStamp=210000, Date=20150309, Status=C, Change=8.394855, TickCount=44, IndexCode=RUU, TotalReturnValue=1223.592657, TRIChange=6.073145]

Non TR Index

PDG01RR/RUV:Tick=44, Replay=False, Fields=[Currency=USD, PrevCloseDate=20150306, PrevClose=1220.517802, LastValue=1226.590947, TimeStamp=210000, Date=20150309, Status=C, Change=6.073145, TickCount=44, IndexCode=RUV]

Close Only Update

Total Return Index

PDG01RR/RUU:Tick=45, Replay=False, Fields=[PrevCloseDate=20150309, PrevClose=1288.912657, LastValue=1270.435267, Date=20150310, Status=C, Change=-18.477390, TickCount=45, TotalReturnValue=1208.541309, TRIChange=-18.049638]

Non TR Index

PDG01RR/RUV:Tick=45, Replay=False, Fields=[PrevCloseDate=20150309, PrevClose=1226.590947, LastValue=1208.541309, Date=20150310, Status=C, Change=-18.049638, TickCount=45]