



# TTIS TIMETABLES DATA INTERFACE DEFINITION

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**Distribution:**

RSP

Registered Users of the TTIS Timetables Data Interface

Atos – Standard Recipients of Interface Specifications

## Version History

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05-01 (final)	13/10/09	S Standley	Cosmetic changes. Document updated to new RSP format.
06-00 (final)	12/04/12	Peter Arnold / Vish Varsani	"Atos Origin" replaced by "Atos"; "TSDB" replaced by "ITPS"; TTIS contact details updated; minor changes to Header and reference to CIF File.

## Release Control

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Organisation	Role	Name
RSF	Approval of Standards	Retail Systems Forum

## Distribution

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# 1. INTRODUCTION

## 1.1 Description and Purpose

This document describes the Timetables Data Interface from the Timetables Information Service.

## 1.2 Applicability

Users or potential users of this interface.

## 1.3 Related Documents

- (1) Common Interface File End User Specification (version 27). This document is also known as "RSPS5004 – Common Interface File – End User Specification" and can be found at [www.atoc.org](http://www.atoc.org)

## 1.4 Responsibilities

No specific responsibilities stated.

## 1.5 Abbreviations and Terminology

3-Alpha Code	3 letter code used in various rail retail systems to identify stations
CIF	Common Interface File (Network Rail Standard Train Schedules Interface)
FTF	File to File (Atos bespoke File Transfer Mechanism)
FTP	File Transfer Protocol (Industry Standard File Transfer Mechanism)
ITPS	Integrated Train Planning System (Network Rail Database)
RSID	Retail Service Identifier
TIPLOC	Timing Point Location
TTIS	Timetables Information Service

## 1.6 Station Codes

This document describes timetable services (train, bus and ferry) between stations. In this context, station includes National Rail Stations, Irish (North and Republic) Rail Stations, Bus Stations and Ferry Terminals.

The CIF data uses TIPLOCs to determine locations. TIPLOCs include stations, but also could include other timing points such as junctions and signal boxes. Also a station may have more than one timing point. So for example, Clapham Junction and Willesden Junction each have 5 TIPLOCs.

Other reference data uses the 3-Alpha Codes. These are the codes formerly known as CRS codes. Most stations have one 3-Alpha Code. Some stations have two 3-Alpha Codes, e.g. Tamworth has one for Tamworth High Level and one for Tamworth Low Level. In such cases, one of the 3-Alpha Codes is the principal 3-Alpha Code.

## 2. OVERVIEW

### 2.1 Functional Overview

The Timetable Information Service provides authorised Timetable Information Service customers with timetable data for GB rail services, associated shipping and bus links, and reference data for timetables enquiry systems.

The interface consists of the following files zipped up together

- Full Timetables File. This contains details of all valid bus, passenger train and ferry services as supplied by ITPS in CIF format. The ITPS data will be supplemented with RSIDs by TTIS. A full file will be provided the first time data is sent to new customers and will also be available on request at other times.
- Update Timetables File. In normal circumstances daily timetables customers will receive update files. This file is in CIF format.
- Manual Trains File. This file contains train schedule data for trains, buses and ferries not held by ITPS. This file is in CIF format, but does not include RSIDs. This file is commonly known as the “Z Trains File”.
- Master Stations Names File. This file stores all location specific data that is relevant to systems using TTIS data.
- Fixed Link File. This file contains details of walk, bus, tube and Metro links between stations for which timetabled services are not stored in the TTIS database.
- Set File. This is a non changing file, with one line of data “UCFCATE”. This does not serve any purpose.
- Report File. This file contains a list of files sent.

### 2.2 Technical Overview

The files are available to receive by FTF over the Rail network or by non-secure FTP over the internet. For Traveline an FTP server is available on the Internet for the timetable files to be downloaded.

### 2.3 Availability

Data will be despatched daily. Traveline users will need to download the data from the FTP server at the frequency agreed with RSP.

### 2.4 Error Handling and Recovery

Atos will automatically monitor that the files are despatched, and in the event of a transfer failure being detected, will intervene to resend the files. For Traveline once the files have been dispatched successfully to the FTP server, it is the responsibility of the users to ensure the success of the download of the timetable files from the FTP server.

In the event of receipt of corrupted data by the Timetables Information Service customer, the Timetables Information Service customer shall notify Atos, who shall be responsible for re-sending the data on the next business day.

## 2.5 TTIS Service Contacts

For data content and file transfer issues:

Rail Settlement Plan Ltd:

- tel. no. 0207-841-8107
- e-mail [vishal.varsani@atoc.org](mailto:vishal.varsani@atoc.org)

### 3. INTERFACE DEFINITION

#### 3.1 Overall Data Specification

The individual files will be zipped up into a single zip file.

This file will be called

TTFnnn.ZIP (for a file containing a full refresh CIF)

TTCnnn.ZIP (for a file containing a changes CIF)

where nnn is a sequential number 001-999.

This sequential number will be kept in step between all recipients of this data. Therefore a new recipient will receive data with a sequence number dependent on wherever the sequence is up to.

The following files are included. The nnn below is the same sequential number as in the ZIP file name.

For Traveline customers downloading files from the TTIS FTP Server only the full refresh version is available. The file is held in the \data folder on the server, in the form YYYYMMDD.ZIP and as a fixed name of 'TTLATEST.zip'. The latest version of this document is also held on the FTP server, in the \documents folder.

Name	Filename	Description
Full Timetables File	TTISFnnn.MCA Or YYYYMMDD.MCA	Full Timetables Schedules file for services held in ITPS, with RSID added. Only one of the Full or Update files is sent.
Update Timetables File	TTISCnnn.CFA Or YYYYMMDD.CFA	Update Timetables Schedules file for services held in ITPS, with RSID added. Only one of the Full or Update files is sent.
Manual Trains File	TTISFnnn.ZTR Or YYYYMMDD.ZTR	Manual Timetables Schedules file for services not held in ITPS, with RSID not added. This contains details of some ferry services, some connecting bus services, mainline train services in Northern Ireland, and mainline train services in the Republic of Ireland.  This is sent as a full file in every transfer; even if there have been no changes.



Name	Filename	Description
Fixed Links File	TTISFnnn.FLF Or YYYYMMDD.FLF	<p>This consists of details about fixed links between stations and includes details of transfer times (minutes) and mode, e.g. Walk, Bus, Tube.</p> <p>Each pair of stations may be joined by only one link in this file.</p> <p>This is sent as a full file in every transfer; even if there have been no changes.</p>
Additional Fixed Links File	TTISFnnn.ALF Or YYYYMMDD.ALF	<p>This contains details of fixed links between stations and includes details of transfer times (minutes) and mode, e.g. Walk, Bus, Taxi, Tube.</p> <p>Each pair of stations may be joined by up to seven links in this file.</p> <p>This is sent as a full file in every transfer; even if there have been no changes.</p> <p>Only one of the Fixed Links or Additional Fixed Links files is sent.</p>
Master Stations Names File	TTISFnnn.MSN Or YYYYMMDD.MSN	<p>This contains details of all public stations, ferry terminals and bus stops for services from ITPS and the manual trains file</p> <p>This is sent as a full file in every transfer; even if there have been no changes.</p>
TOC Specific Interchange Times File	TTISFnnn.TSI Or YYYYMMDD.TSI	<p>This contains details of the minimum interchange times at stations at which different minimum interchange times apply, depending on the TOC(s).</p> <p>This file is sent optionally to Data Users who have requested to receive it. For Data Users who have requested to receive it, this file is sent as a full file in every transfer; even if there have been no changes.</p>
Set File	TTISFnnn.SET (not on FTP Traveline server)	<p>This contains the fixed text "UCFCATE" and does not serve any purpose.</p>
Report File	TTISFnnn.DAT Or YYYYMMDD.DAT	<p>This consists of a list of the other files included in the interface.</p>

Typical file sizes are in the table below.

Name	Format	Record Length	Typical No. of Records	Typical File Size	Typical Zipped Size
Full Timetables File	Sequential Fixed Length	80	2500000	200Mb	22Mb
Update Timetables File	Sequential Fixed Length	80	75000	6Mb	660Kb
Manual Trains File	Sequential Fixed Length	80	60000	5Mb	330Kb
Fixed Links File	Sequential Fixed Length	80	400	33Kb	3Kb
Additional Fixed Links File	Sequential Variable Length	81 (Max)	1600	130Kb	12Kb
Master Stations Names File	Sequential Fixed Length	82	7000	600Kb	110Kb
TOC Specific Interchange Times File	Sequential Variable Length	113 (Max)	25	3Kb	1Kb
Set file	Sequential Fixed Length	7	1	9b	9b
Report File	Sequential Variable Length	20 (Max)	7	140b	70b

Typical Refresh Zip File Size 22.5 Mb.

Typical Update Zip File Size 1.1Mb.

## 3.2 Individual File Specifications

### 3.2.1 Full Timetables Refresh File

This file contains the service details of trains, buses and ferries as passed from ITPS.

The format of this data is as defined in the CIF specification (version 27), as issued by Network Rail, with the addition of one field.

This field is Retail Service Identifier (RSID), and consists of 2 alpha characters followed by 6 numeric characters. It is on the "BX" basic schedules extra details record and immediately follows the field "Applicable Timetable Code". It is also on the CR record and immediately follows the UIC code field.

Example records containing RSID field

```
BX          AWYAW021000
CRCRSTRS  XZ1S262701123551003ZE  595    R      SBA C                SR270102
```

Examples of all records

```
HDTPS.UCFCATE.PD0501232301052025DFTTISZ          FA230105240106
TIWITYNE 00158900WWITNEY MARKET PLACE          00000  0
TABRSTAIR00323189FBRISTOL INTERNATL AIRPORT 00000  0XPB
TDNTHWICH
AANC51143G045170412270506091111000VVNCRSTRS  TP
BSNC511430412270506091111000 PXZ1S262701123551003ZE  595    R      SBA C                P
BX          SRYSR270103
LOEUSTON  2345 234515 E          TBK
LICMDNSTH          2348 00000000
CRCRSTRS  XZ1S262701123551003ZE  595    R      SBA C                SR270102
LTGLGC    0715 071610          TF
ZZ
```

The TIPLOC records TI, TA, TD should not be used as the source of location information. The best source of location information is the Master Stations Names File.

The full timetables file is sent on the first transfer for each user and thereafter only on request. Normally the update timetables file will be sent.

### 3.2.2 Update Timetables Refresh File

This file is in the same format as the Full Timetables Refresh File, i.e. CIF format with the field, Retail Service Identifier, added.

The rules for processing update records are specified in the CIF Specification.

### 3.2.3 Manual Trains File

This file is in CIF format, except that location records normally have the TIPLOC field (seven characters) populated with the 3-Alpha Code, followed by “---”, and the header record is blank, other than a “\*” in the version character of the field Current File Ref. This file does not contain Retail Service Identifiers.

The Manual Trains file has standard CIF train headers except that the following fields are always left as spaces; Train Identity, Headcode, Course Indicator, Train Service Code, Business Sector, Timing Load, Speed, Operating Characteristics.

The Manual Trains file has a standard CIF trailer.

Example of all records

```

HD                                     *
BSNZ013094602294904030000001 BBS          S          P
BX
LOJSY---- 1645 1645          TB
LIGUS---- 1740 1800          17401800      T
LTWYQ---- 2000 2000          TF
ZZ
    
```

### 3.2.4 Fixed Links File

This describes details of links between two 3-Alpha Codes for stations, ferry terminals or bus stops, and the method and time of travel between.

Each pair of stations, ferry terminals or bus stops may be joined by only one link in this file.

Record Layout

Name	Length	Description
Link	17	“ADDITIONAL LINK: “
Mode	3, 4, 5 or 8	BUS, TUBE, WALK, FERRY, METRO or TRANSFER
Between	9	“ BETWEEN “
Origin	3	3-Alpha Code at beginning of link
And	5	“ AND “
Destination	3	3-Alpha Code at end of link
In	4	“ IN “
Time	3	Minutes (between 1 and 99), with leading zeroes suppressed
Minutes	8	“ MINUTES”
Spaces	25, 24, 23 or 20	Filler of spaces. The length depends on how long the Mode description was.

There is one trailer record containing “END” followed by 77 spaces.

Example records

```

ADDITIONAL LINK: WALK BETWEEN ABR AND ACY IN 3 MINUTES
ADDITIONAL LINK: METRO BETWEEN ALT AND BUR IN 63 MINUTES
END
    
```

### 3.2.5 Additional Fixed Links File

This describes details of links between two stations, ferry terminals or bus stops, and the method and time of travel between.

Each pair of stations, ferry terminals or bus stops may be joined by up to seven links in this file. Where more than one link joins a pair of stations on a given day/time, then the choice of which link should be used in an journey is determined by the Priority Field.

#### Record Layout

Name	Length	Description
Link	2	"M="
Mode	3, 4, 5 or 8	BUS, TUBE, WALK, FERRY, METRO, TRAM, TAXI or TRANSFER
Comma	1	","
O=	2	"O="
Origin	3	3-Alpha Code for location at beginning of link
Comma	1	","
D=	2	"D="
Destination	3	3-Alpha Code for location at end of link
Comma	1	","
T=	2	"T="
Time	1,2	Minutes (between 1 and 99)
Comma	1	","
S=	2	"S="
Start Time	4	Start Time in hhmm format
Comma	1	","
E=	2	"E="
End Time	4	End Time in hhmm format
Comma	1	","
P=	2	"P="
Priority	1	1 – 7 with 1 being lowest priority
Comma	1	","
F=	2	"F="
Start Date	10	Optional start date dd/mm/yyyy format
Comma	1	","
U=	2	"U="
End Date	10	Optional end date dd/mm/yyyy format

Name	Length	Description
Comma	1	“,”
R=	2	“R=”
Days of week	7	NNNNNNN where N is set to 1 for active days, 0 for inactive days, for days Monday to Sunday

**Example records**

M=TUBE,O=EUS,D=LST,T=13,S=0530,E=2359,P=4,R=1111110

M=METRO,O=MAN,D=MCV,T=8,S=0001,E=2359,P=5,F=07/01/2009,U=28/02/2009

**3.2.6 TOC Specific Interchange Times File**

This overrides the minimum interchange time at a station for a journey when changing from one TOC to another.

**Record Layout**

Name	Length	Description
Station code	3	3-Alpha Code
Comma	1	“,”
Arriving train TOC	2	TOC ATOC code
Comma	1	“,”
Departing train TOC	2	TOC ATOC code
Comma	1	“,”
Minimum Interchange Time	1,2	Minimum Interchange time in minutes 1 – 99
Comma	1	“,”
Comments	0-100	Optional comments

**Example records**

BAA,SN,SN,3,Barnham station (between Southern trains)

SOU,SN,SW,4, Southampton Central (Southern > South West Trains)

SOU,SW,SN,4, Southampton Central (South West Trains > Southern)

### 3.2.7 Master Stations Names File

This contains details of all public stations, ferry terminals and bus stops for services from ITPS and the manual trains file.

The file consists of various record types in the following order:

- Header
- For Each Station
  - For Each TIPLOC for station
    - 1 Station Detail record
    - 0, 1, 2, 3 or 4 Table number records
    - 0 or 1 Comment Record (only written for first TIPLOC for a station)
  - End For
- End For
- All Alias records
- All Group records
- All Connection records
- All Routeing Group records
- Trailer 1
- Trailer 2
- Trailer 3
- Trailer 4
- 440 3-Alpha usage records
- Trailer 5

Note that stations can have more than one TIPLOC; e.g. Clapham Junction and Willesden Junction have 5 TIPLOCS.

#### 3.2.7.1 Header

Name	Length	Description
Record Type	1	"A"
Spaces	29	Spaces
File Spec	10	"FILE-SPEC="
Version	8	Currently "05 1.00 "
Date	8	Date file created dd/mm/yy
Space	1	Space
Time	8	Time file created hh.mm.ss
Spaces	3	Spaces
Version	2	Two-digit sequence number, 00-99
Spaces	12	Spaces

### 3.2.7.2 Station Details

These records occur once for each TIPLOC (station, ferry terminal or bus station).

Name	Length	Description
Record Type	1	"A"
Spaces	4	Spaces
Station Name	30	Station Name
CATE Type	1	Interchange Status. Values: 0 Not an interchange Point 1 Small Interchange Point 2 Medium Interchange Point 3 Large Interchange Point 9 This is a subsidiary TIPLOC at a station which has more than one TIPLOC. Stations which have more than one TIPLOC always have the same principal 3-Alpha Code.  This field enables a Timetables enquiry system to give some precedence for changing at large interchange points ahead of medium interchange points ahead of small interchange points.
TIPLOC code	7	Location code as held in the CIF data
Subsidiary 3-Alpha code	3	Where a station has more than one TIPLOC e.g. Tamworth, this is set to the 3-Alpha Code that is not in the field below. Normally this is a repeat of the 3-Alpha Code
Spaces	3	Spaces
3-Alpha Code	3	Principal 3-Alpha Code of Station. Part of location code for the manual trains CIF data
Easting	5	Easting in units of 100m. Stations too far south (Channel Islands) or too far north (Orkneys) or too far west (west of Carrick on Shannon) have both their Easting and Northing set to 00000. The most westerly station in range, Carrick on Shannon, has value 10000. The most easterly station, Amsterdam, has value 18690.
Estimated	1	"E" means estimated coordinates, space otherwise
Northing	5	Northing in units of 100m. Stations too far south (Channel Islands) or too far north (Orkneys) or too far west (west of Carrick on Shannon) have both their Easting and Northing set to 00000. The most southerly station in range, Lizard (Bus), has value 60126. The most northerly station in range, Scrabster, has value 69703.
Change Time	2	Change time in minutes



Name	Length	Description
Footnote	2	CATE footnote. This data is historic, is not maintained and should be ignored.
Spaces	11	Spaces
Region	3	Sub-sector code. One of about 80 geographical region codes. This data is historic, is not maintained and should be ignored.
Space	1	Space

**3.2.7.3 Station Table Numbers**

These records occur 0, 1 or many times (up to 4 for Reading, Kings Cross Thameslink, and Birmingham New Street). This data is historic, is not maintained and should be ignored.

Name	Length	Description
Record Type	1	"B"
Spaces	4	Spaces
Station Name	30	Station Name
Space	1	Space
Table Number	4 x 11	11 occurrences of table number in the National Rail Timetable, e.g. 026A
Spaces	2	Spaces

**3.2.7.4 Station Comments**

These records occur 0 or 1 times for a TIPLOC (station). This data is historic, is not maintained and should be ignored.

Name	Length	Description
Record Type	1	"C"
Comment	81	Comment about station

**3.2.7.5 Station Alias**

These records occur 0 or 1 times for a station.

Name	Length	Description
Record Type	1	"L"
Spaces	4	Spaces
Station Name	30	Station Name
Space	1	Space
Alias Name	30	Station Alias
Spaces	16	Spaces

### 3.2.7.6 Groups

These records occur once for each group. This data is historic, is not maintained and should be ignored.

Name	Length	Description
Record Type	1	"G"
Spaces	4	Spaces
Group Name	30	Group Name
Space	1	Space
Station	4 x 10	Up to 10 occurrences of 3-Alpha Code followed by a space, for each station in the group
Spaces	6	Spaces

### 3.2.7.7 Connection Details

These records occur once for some non-National-Rail stations. This data is historic, is not maintained and should be ignored.

Name	Length	Description
Record Type	1	"R"
Spaces	4	Spaces
Station Name	29	Station Name
3-Alpha Code	3	3-Alpha Code of connecting station
Connection Mode	1	B = Bus, U = Underground, F = Ferry, T=Tram
Distance	2	Miles
Time	2	Minutes (but in fact always set to mileage)
Weekday	variable	Weekday Frequency Text
Percent	1	"%"
Sunday	variable	Sunday Frequency Text
Spaces	variable	Spaces

### 3.2.7.8 Routeing Groups

These are Groups of stations that are to be used in Fares Route Validity checks.

For example, if a Fares Route stated that a fare was not valid via Newark North Gate, then because Newark Castle is in the same Routeing Group as Newark North Gate, then this fare would also not be valid via Newark Castle.

These records occur once for each group.

Name	Length	Description
Record Type	1	"V"
Spaces	4	Spaces
Group Name	30	Group Name
Space	1	Space
Station	4 x 10	Up to 10 occurrences of 3-Alpha Code followed by a space, for each station in the group
Spaces	6	Spaces

### 3.2.7.9 Trailer 1

This data is not maintained and should be ignored.

Name	Length	Description
Record Type	1	"Z"
Spaces	4	Spaces
Fixed Value	30	"ZZZZZZZZZZ" END OF MSNF"
Spaces	47	Spaces

### 3.2.7.10 Trailer 2

This data is not maintained and should be ignored.

Name	Length	Description
Record Type	1	"Z"
Spaces	4	Spaces
Fixed Value	57	"ZZZZZZZZZZZZZZZZZZ" LAST WRITTEN BY MSFD. PERMIT RUN"
Spaces	20	Spaces

### 3.2.7.11 Trailer 3

This data is not maintained and should be ignored.

Name	Length	Description
Fixed Value	4	"0001"
Spaces	78	Spaces

**3.2.7.12 Trailer 4**

This data is not maintained and should be ignored.

Name	Length	Description
Fixed Value	27	"MSED 1.00 11/01/01 11.12.03"
Spaces	55	Spaces

**3.2.7.13 3-Alpha Code Usage**

These records codify whether each of the possible 26x26x26 (=17576) 3-Alpha codes are assigned to a station. This data is historic, is not maintained and should be ignored.

Name	Length	Description
3-Alpha Code Used	2 x 40	"-1" 3-Alpha Code used, " 0" 3-Alpha Code not used
Spaces	2	Spaces

**3.2.7.14 Trailer 5**

This data is not maintained and should be ignored.

Name	Length	Description
Fixed Value	11	"End of File"
Spaces	71	Spaces

**Example records**

```

A                               FILE-SPEC=05 1.00 06/01/05 14.13.21   78
A  NAVIGATION ROAD              1NAVGTNRNVR   NVR13772 63888 2      480
B  NAVIGATION ROAD              098
A  RETFORD                      2RTFD   RET   RET14702 6380410      210
B  RETFORD                      026
A  RETFORD LOW LEVEL            9RTFDLL REL   RET14704 6380210      210
B  RETFORD LOW LEVEL            029A
C    STATUS 1 FOR FIXLINK TO BROMLEY SOUTH
L  ALFRETON                     ALFRETON & MANSFIELD PKWAY
G  NEWARK                       NCT NNG
R  FLEETWOOD                    BPNB1010Every half-hour%Every half-hour
V  WALTHAMSTOW CENTRAL         WHC WMW BHO
Z  ZZZZZZZZZZ                  END OF MSNF
Z  ZZZZZZZZZZZZZZZZ           LAST WRITTEN BY MSED. PERMIT RUN
0001
MSED 1.00 11/01/01 11.12.03
-1-1 0-1-1 0-1-1-1 0-1 0-1-1 0 0 0-1-1 0-1 0-1 0-1-1-1 0 0-1-1 0-1 0 0 0-1 0-1-1
-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
End of File

```

### 3.2.8 Report File

This lists the files in the zip file.

#### Header

Name	Length	Description
Fixed value	4	"HEAD"
Creation Date	8	Format YYYYMMDD
Creation Time	6	Format HHMMSS

#### File Record

Name	Length	Description
Fixed Value	4	"FIL="
Filename	variable	File name
Spaces	variable	Spaces

#### Trailer

Name	Length	Description
Fixed Value	4	"TAIL"

#### Example records

```
HEAD20050109235908
FIL=TTISC036.CFA
FIL=TTISF036.ZTR
FIL=TTISF036.FLF
FIL=TTISF036.MSN
FIL=TTISF036.SET
TAIL
```

For FTP Traveline server

```
HEAD20050109235908
FIL=20050109.CFA
FIL=20050109.ZTR
FIL=20050109.FLF
FIL=20050109.MSN
TAIL
```