



ASSOCIATION of TRAIN OPERATING COMPANIES

# RJIS Datafeeds Interface Specification for Timetable Information

**RSP Document Ref: RSPS5001**  
**Version: 12-01**

*Portions of this document are Copyright (c) 2009 Fujitsu Services Ltd and are used by RSP with permission to sub-license to third parties only for the purpose of designing, developing and maintaining interfaces to RJIS.*

## Version History

Version	Date	Author	Comments
a	17/09/1998	John Pointon	First draft for comment
b	06/10/1998	Kevin Rutherford	Added file headers & footers
c	19/01/1999	John Pointon	Changes to produce CIF format files. As a result of SS0002 change control.
D	17/02/1999	Andy Burton	Further refinement on issue "c" as a result of SS0002 change control.
E	26/03/1999	Andy Burton	Responses received from RSP to issue "d".
1	06/05/1999	Andy Burton	Formal Issue.
1a	04/01/2000	Libby Graven	Include Master Stations Names File and Fixed Links File outputs to release interchange times, OS reference codes and Fixed Links. Header & footer updated.
1b	24/01/2000	Libby Graven	Responses received from RSP to issue 1a.
1c	02/02/2000	Libby Graven	Responses received from RSP to issue 1b.
2	23/02/2000	Libby Graven	Formal issue.
2a	13/06/2000	Andy Burton	Bring into line with CIF A/B set and MSNF knowledge. Remove references explaining how the files are generated as this should be in the low level design specification.
2b	13/07/2000	Andy Burton	Responses received from RSP to issue 2a
3	01/08/2000	Andy Burton	Formal Issue for signature.
3a	15/08/2000	Andy Burton	Responses received from RSP to issue 3
4	22/08/2000	Andy Burton	Formal issue for signature
5	21/03/2001	Dave Pearson	Re-issue for signature 1.4 References to documents that are not open standards removed
6	15/10/2001	Dave Pearson	Correction to section 5.4.5. Field 13 – Pathing Allowance changed to 2 characters as specified in 'CIF End User Specification Issue 14' and as delivered by the data feed.
7	06/02/2002	Carol Oakden	Change to statement regarding sort order of records in file.
8	30/04/2002	Carol Oakden	Added example regarding sort order (for clarification). Formal issue for signature
8a	15/09/2003	Derek Martin	CN325 – Amended to include TTIS Retail Train ID changes
8b	23/09/2003	Derek Martin	CN325 – Amended following confirmation of filenames and migration from CIF to TTIS CIF from Ssema (Malcolm Riley).
9	30/10/2003	Mark Worlock	Document issued at version 9
9a	22/01/2004	Dave Oakley	CN325 – Amendments following confirmation that Ssema are no longer supporting set "B" functionality at Release 3.
9b	05/02/2004	Dave Oakley	CN325 – Responses received from RSP to issue 9a.
10	17/02/2004	Dave Pearson	Formal issue for RJIS Release 3
10a	18/02/2004	Dave Pearson	Changes for RJIS Release 4. Removal of Original CIF Timetable data feed
11	26/02/2004	Dave Pearson	Formal issue for RJIS Release 4
12	16/02/2006	Shirley Jinks	Name change from RailTrack to Network Rail identified by RSP.
12-01	20/08/2009	Shane Standley	Cosmetic changes - Document upgraded to the standard RSP document template. Copyright clause added.

## Release Control

The following personnel must formally approve the document prior to assigning a non-draft version number.

Organisation	Role	Name
RSF	Retail Systems Forum	Former RSSG Members

## Distribution

Organisation	Role	Name
TIS Suppliers	n/a	n/a

## Copyright

The copyright in this work is vested in RSP Ltd and the information contained herein is confidential. This work (either in whole or in part) must not be modified, reproduced, disclosed or disseminated to others or used for purposes other than that for which it is supplied, without the prior written permission of RSP Ltd. If this work or any part hereof is furnished to a third party by virtue of a contract with that party, use of this work by such party shall be governed by the express contractual terms between RSP Limited which is a party to that contract and the said party. Portions of this document are Copyright (c) 2009 Fujitsu Services Ltd and are used by RSP with permission to sub-license to third parties only for the purpose of designing, developing and maintaining interfaces to RJIS. © 2009

## Abbreviations

ATOC	Association of Train Operating Companies
CIF	Common Interface File
CRS	Computerised Reservation System
FLF	Fixed Links File
MSNF	Master Station Names File
NLC	National Location Code
PO MCP	Post Office Location Code
RJIS	Rail Journey Information Service
RSP	Rail Settlement Plan
STP	Short Term Plan
TIPLOC	Timing Point Location
TSDB	Train Service Database
TTIS	Time Table Information Service
UID	Unique Identifier

## Table of Contents

<b>Abbreviations .....</b>	<b>3</b>
<b>1        ACKNOWLEDGEMENTS. ....</b>	<b>6</b>
<b>2        INTRODUCTION. ....</b>	<b>6</b>
<b>3        APPROACH .....</b>	<b>6</b>
<b>4        STRUCTURE.....</b>	<b>7</b>
<b>5        KEY TECHNICAL DETAILS.....</b>	<b>9</b>
<b>5.1      Basic Timetable Detail File Contents .....</b>	<b>9</b>
5.1.1      Schedule Records.....	10
5.1.2      Associations Records. ....	10
5.1.3      TIPLOC Codes .....	10
<b>5.2      BTD File Format .....</b>	<b>11</b>
<b>5.3      BTD Record Layouts.....</b>	<b>12</b>
5.3.1      Header Record.....	12
5.3.2      Basic Schedule .....	13
5.3.3      Basic Schedule Extra Details .....	13
5.3.4      Origin Station.....	14
5.3.5      Intermediate Station .....	14
5.3.6      Changes En Route.....	15
5.3.7      Terminating Station.....	15
5.3.8      Association .....	16
5.3.9      TIPLOC Insert.....	16
5.3.10      TIPLOC Amend .....	17
5.3.11      TIPLOC Delete .....	17
5.3.12      Trailer Record.....	17
<b>5.4      Other CIF Files Format.....</b>	<b>17</b>
<b>5.5      TTIS Rejects File Format.....</b>	<b>17</b>
<b>5.6      Z Trains File Format .....</b>	<b>18</b>
<b>5.7      CIF Set Details File Format .....</b>	<b>18</b>
<b>5.8      Fixed Leg File Contents .....</b>	<b>18</b>
5.8.1      FLF File Format.....	18
5.8.2      Merge .....	19
5.8.3      Metro.....	19
5.8.4      Walk.....	19
5.8.5      Tube.....	19
5.8.6      Bus .....	19
5.8.7      Transfer .....	19
5.8.8      Ferry .....	19
5.8.9      Train.....	19
5.8.10      File Terminator .....	19
<b>5.9      Master Station Name File Contents .....</b>	<b>20</b>
5.9.1      MSNF File Format.....	20
5.9.2      MSNF Record Layouts .....	20

<b>6</b>	<b>Example BTD data.....</b>	<b>25</b>
<b>7</b>	<b>Example TTIS Rejects data .....</b>	<b>25</b>
<b>8</b>	<b>Example CIF Set DETAILS data. ....</b>	<b>26</b>
<b>9</b>	<b>Example FLF data.....</b>	<b>26</b>
<b>10</b>	<b>Example MSNF data. ....</b>	<b>27</b>
<b>11</b>	<b>SYSTEM LIMITS. ....</b>	<b>28</b>
<b>12</b>	<b>Datafeed Service.....</b>	<b>29</b>
<b>12.1</b>	<b>Provision.....</b>	<b>29</b>
<b>12.2</b>	<b>Transfer Mechanism.....</b>	<b>29</b>
<b>12.3</b>	<b>Data Integrity .....</b>	<b>30</b>
<b>12.4</b>	<b>Security .....</b>	<b>30</b>
<b>12.5</b>	<b>Communications .....</b>	<b>30</b>
<b>12.6</b>	<b>Documentation .....</b>	<b>30</b>
<b>13</b>	<b>REGISTERING FOR THE SERVICE .....</b>	<b>31</b>

## 1 ACKNOWLEDGEMENTS.

The information provided in this document regarding CIF format is reproduced from "CIF End User Specification Issue 18+" which is copyright Network Rail.

The information provided in this document regarding data content is reproduced from the "TSDB & CIF Lists of Valid Values" appendix A (June 1998) in the "CIF End User Specification Issue 18+" which is copyright Network Rail.

The master station names file and the fixed links file are provided to RJIS by Atos Origin, though the original data is generated by AEAT. The master station names file contents information is extracted from document SAO-CAT-SP-18 entitled "Master Station Names Files Specification 06", written by AEAT. The fixed link file contents information is extracted from document SAO-CAT-SP-65 entitled "ANLY Fixed Links File Specification," written by AEAT.

## 2 INTRODUCTION.

RSP Ltd have taken steps to ensure that all necessary actions and permissions are gained from Network Rail and all other parties as necessary to permit Fujitsu Services Ltd to reproduce Network Rail documentation relating to CIF, and to permit RJIS to take CIF data, manipulate it (including the addition of Bus and Ferry Operator's data), and present the modified data as a datafeed to external parties in CIF format.

The Timetable datafeed will allow the static data held within the Data Factory to be made available to a file based system. The datafeed is run nightly; therefore static data is defined as data not required to be extracted more frequently than 24hrs. See section 5.1 Basic Timetable Detail File Contents for a description of the scope of supply relating to the data content.

Dynamic extracts from RJIS are covered by API (Application Program Interface) specifications.

The datafeed service will be available at each phase of the RJIS Development but will be limited to the data available in the data factory at each stage.

The RJIS System will be responsible for the delivering of the relevant file(s) to an approved destination that meets the Fujitsu Services Ltd minimum specification.

This document has been extended to cover the extensions made to the CIF format for use with the TTIS.

## 3 APPROACH

This document describes in detail the structure and content of the datafeed for Timetable data extracted from the RJIS Data Factory.

It is based on the generic specification which defines the basic rules and procedures that will apply to the datafeeds.

Other documents in this phase are:

RJIS Datafeeds Interface Specification for National Routing -  
Guide sp0037

RJIS Datafeeds Interface Specification for Fares and -  
Associated Data sp0035

## 4 STRUCTURE

The datafeeds are delivered as flat files. There is a file in the extract consisting of the schedule data available in the Data Factory this can be supplied as a full CIF file or today's updates only in CIF format.

Fujitsu Services have received notification from Atos Origin that they will only support one set of timetable data, known as the set "A" files.

The "Z" trains data (bus, ferry etc) is always a full file in Quasi-CIF format and applies to the currently Live CIF data only. This file is supplied separately to avoid mixing Daily updates with full files of "Z" trains data and to avoid mixing CIF format and Quasi-CIF format files.

The Fixed Links File is always a full file and applies to the currently Live CIF data only.

The Master Station Names File is always a full file and applies to the currently Live CIF data only.

This "TTISReject" file contains records from the TSDB 'CIFfile' that have been rejected by the TTIS team before sending the CIFdata to RJIS.

To maintain business continuity for existing RJIS datafeed customers, the filenames used in the TTIS timetable datafeed remain the same as they are for the original timetable datafeed, with the exception of any new files added.

The following export file types are defined for the TTIS CIF Timetable datafeed:

File type	Contents	Typical Size*	Generic filename
Full Basic Timetable Detail for Set A	Full CIF file containing all timetable details for Set A in TTIS CIF Format.	200Mb	RJTTFnnn.MCA
Daily Updates to Timetable Detail for Set A	File of updates to be applied to Full Basic Timetable Detail for Set A.	5Mb	RJTTCnnn.CFA
CIF Set Details	File indicating which TTIS CIF (A or B) is current  In practice from Release 3 onwards,	< 1Kb	RJTTFnnn.SET

	this file will only indicate set "A" by the presence of a single record containing "UCFCATE".		
Z Trains	Quasi-CIF format file containing details of bus and ferry transportation. Refresh Only File.	2Mb	RJTTFnnn.ZTR
Fixed Links	Fixed Links File containing details of links between stations involving transfer by other than train Refresh Only File.	30Kb	RJTTFnnn.FLF
Master Station Names	Details about stations including such data as map reference etc. Refresh Only File.	600Kb	RJTTFnnn.MSN
TTIS Reject	File contains records from the TSDB 'CIFfile' that have been rejected by the TTIS team before sending the CIFdata to RJIS	1Mb	RJTTFnnn.REJ
Contents File	This file lists all the filenames included in the timetable datafeed set, with the exception of the contents file itself. Two of these files exist, one for customers receiving a full datafeed, one for customers receiving an update only feed.	1Kb 1Kb	RJTTFnnn.DAT RJTTCnnn.DAT
ZIP files	Compressed files containing the full and update only files respectively.	35Mb 2Mb	RJTTFnnn.ZIP RJTTCnnn.ZIP

(where *nnn* is a sequence number defined by the file's exporter).

\*The typical size is for guidance only. The CIF file size for example may vary from 2Mb to 300Mb.

The format of the files used in the Timetable datafeed is defined in the next section. This has taken into account all the necessary standards.



## 5 KEY TECHNICAL DETAILS

Output from the Timetable datafeed are text files in ASCII format (making the datafeed suitable to be read by DOS/Windows/UNIX operating systems) containing multiple data record types.

Files in CIF format are supplied with the standard header as defined by the CIF format in section 5.3.1.

The TTIS Rejects file is supplied in the format as defined in section 5.5.

The "Z" Trains file is supplied in Quasi-CIF format with the header as defined in section 5.6. Files not in CIF or Quasi-CIF format contain an informational header, followed by a sequence of records, followed by a terminator. Every line of the files is either a comment (introduced by a leading '/' character) or a record.

Each file commences with the following sequence of comments:

```
#!/ Start of file
#!/ Content type: CIF Set Details
#!/ Sequence:      nnn
#!/ Generated:     dd/mm/yyyy
#!/ Exporter:      RJIS_module version
```

The sequence number listed in the header matches that in the filename (see above).

The file terminates with a comment line of the form:

```
#!/ End of file (n records) (dd/mm/yyyy)
```

thus providing some protection against inadvertent file truncation.

The number of records reported in the trailer does not include comment lines. The value is variable length and does not include leading zeros. So for example, If there are 10000 records the figure is 10000, if there are 10 records the figure is 10 (not 00010).

Note that all the files that form part of this data feed (except the contents file) are supplied to Fujitsu Services Ltd by a third party. Fujitsu Services Ltd cannot be held responsible for changes to the format or content without their knowledge.

### 5.1 Basic Timetable Detail File Contents

The Basic Timetable Detail (BTD) record formats are exactly the same as the CIF record formats. Information about CIF contents and formats are reproduced here for information (see "ACKNOWLEDGEMENTS." on page 6 for source references). RSP will issue technical documentation of this sort as part of the end-user license agreement. The record layouts may change over time.

It should be noted that the CIF datafeed to the RJIS data factory is a subset of the data held on the Train Service Database. The RJIS timetable datafeed is not a replacement of the CIF mechanism provided by Network Rail, it is a timetable datafeed supplemented with additional information (such as Bus and Ferry details). For example, RJIS does not receive information about empty rolling stock, freight movements, etc and cannot therefore pass such information forward to other users.

### 5.1.1 Schedule Records.

The file contains a set of train schedules. A train schedule is an image of a train where all the train's details are constant for the dates the schedule applies.

Where a train is declared to run indefinitely it is given an end-date of '999999'. Only schedules for totally valid trains are generated on the extract file. Should a valid train be edited on the TSDB and in consequence become invalid, the user will be left with the last valid schedule(s) for the train. When the train is again declared valid, the new set of schedules will become available for the user.

A train schedule can be uniquely identified by UID and Start-date.

### 5.1.2 Associations Records.

The file also contains train association records. These document the link between a pair of trains. Associations are passed independently of train schedules. Association records are defined in section 5.3.8.

CIF will document when an association occurs by holding the dates for which the association applies, not the schedules it applies to. The user will have to establish the schedules involved in the association.

Associations between 2 trains do not necessarily occur on exactly the same set of dates as far as the train schedule dates are concerned. This situation arises either: (a) when one train runs over midnight and the other does not, and the first train associates with the second after midnight: or (b) where a train terminating late one day is associated with a train which runs early the following day.

e.g. train A runs 29/05/95 – 21/09/95 FSX. Train B runs 30/05/95 – 22/09/95 MSX.

A & B are associated with each other.

The Association applies from 29/05/95 – 21/09/95 FSX.

The association dates refer to those of the Base UID. Where the dates of the associated train schedules will either be 1 day ahead or behind those of the Base UID schedules this is indicated by Association-type. In this case Association-type would be set to 'N' (see later in the document for the list of association types).

In the case of Join & Divide Associations, the Base UID will always be the 'through' train. For Previous/Next Associations, the Base UID will be the train that has a 'next working'.

An association record is identified as:

Base-UID/Assoc-UID/Start-date/Diagram Type/

Location (Assoc-Location/Base-loc-suff/Assoc-loc-suff).

### 5.1.3 TIPLOC Codes

Details of TIPLOC location codes are included in the file. Only details of UK domestic TIPLOCs are included. No facility exists to provide the Continental European all-numeric UIC location codes.

## 5.2 BTD File Format

The file is a sequential text file containing fixed length 80 character records, padded with trailing spaces as necessary. Records are terminated by carriage return line feed pairs under windows, and by "new line" under UNIX. The file contains different record types which can be identified by the 'record identity', the first two bytes of a record.

The sequence of records on the file is significant. The following sequence laws apply (the record identity is given in brackets ( ) ):

- i. Header record (HD)
- ii. TIPLOC insert records (TI)
- iii. All association records in Start-date sequence (AA)
- iv. All train schedules in Start-date/UID sequence (SEE NOTE)  
A train schedule comprises a set of records, output in the following order.
  - a basic schedule record (BS)
  - a basic schedule extra details record (BX)
  - an origin station record (LO)
  - All intermediate station records (LI) in journey sequence
  - preceded by a Change in Route, if present, for the station (CR)
  - Terminating station record (LT)
- v. Trailer record (ZZ)

NOTE: BS Records are sorted in ascending order of date, so records with the start date 991030 would appear before records with the start date 020101 (i.e. it is not an ASCII sort sequence). Note that in the BS record the UID field appears before the start date field, but the start date field is the first sort key, and UID is the secondary sort key.

Therefore the record

BSNY532909805249809200000001 POO2T07 124207004 EMU319 100D B P

would appear in the file before the record

BSNC432909906249909200000001 POO2T07 124207004 EMU319 100D B P

Where a train schedule deletion or cancellation is raised, only a basic schedule record (BS) is output. Otherwise the schedule will consist of at least record types BS, BX, LO and LT.

If the situation arises whereby there are no updates for a particular day, it is possible that an "empty" file will be generated. The "empty" file consists of a header (HD) and trailer (ZZ) record only.

Two other record types – Train Specific Notes (TN) and Location Specific Notes (LN) are identified in CIF, but are not implemented. When these are implemented in CIF, this RJIS datafeed will also implement them.

If a train is updated on TSDB, new schedules will be passed on the BTD file via CIF.

Only trains valid on TSDB are passed to RJIS (and hence to BTD users). This is also true of associations. Only valid associations are passed to RJIS these are associations where both trains are valid on TSDB and the association is valid.

If either of a pair of associated trains is cancelled on an STP basis for some days/dates, this is interpreted as also cancelling the association. A cancellation record for the association will be produced for the appropriate days/dates.

With association redesign implemented on TSDB, full STP facilities are available, including the ability to STP cancel an association without cancelling the trains, or to STP amend an association. Also, it is possible to have an STP association defined, where no permanent association exists. In addition, it is possible for a train to have more than one join or split at a location.

A specific location may occur on each schedule up to nine times. These are distinguished by Unique suffix values (either 'blank' or in the range 2-9 inclusive) following the TIPLOC in the 'LOCATION' field of the LO, LI OT LT records. If present, the suffix value will always appear as the eighth character, even if the TIPLOC has less than seven characters.

There is no sequential cross-checking between first and subsequent instances of a location. So, for example, a second or subsequent instance can appear in a schedule when there is no first instance, or can appear before the first instance.

### 5.3 BTD Record Layouts

Full descriptions can be found on the TSDB Data Dictionary. This will be provided by RSP as part of the license when the datafeed is acquired.

#### 5.3.1 Header Record.

The Header Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "HD")
2. File Identity (20 char)
3. Date of Extract (6 char format ddmmyy defining the date that the BTD extract file was created)
4. Time of Extract (4 char hhmm defining the time that the BTD extract file was created)
5. Current File Reference (7 char unique file reference)
6. Last-file-reference (7 char unique file reference)
7. Update Indicator (1 char, U = update, F = full extract).
8. Version (1 char Version identifier of CIF software)
9. Extract start date (6 char Same as 3. above)
10. Extract end date (6 char)
11. Spare (20 char)

Note the "Version" field will be incremented by Atos Origin for the TTIS CIF datafeed, this new value will be passed though in TTIS CIF files supplied by Fujitsu.

### 5.3.2 Basic Schedule

The Basic Schedule Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "BS")
2. Transaction Type (1 char, "N" = New, D = Delete, R = Revise)
3. Train UID (6 char Unique train Identifier)
4. Date Runs From (6 char yymmdd)
5. Date Runs To (6 char yymmdd or 999999 if on-going)
6. Days Run (7 char)
7. Bank Holiday Running (1 char)
8. Train Status (1 char)
9. Train Category (2 char)
10. Train Identity (4 char)
11. Headcode (4 char)
12. Course Indicator (1 char)
13. Profit Centre Code/ Train Service Code (8 char)
14. Business Sector (1 char)
15. Power Type (3 char)
16. Timing Load (4 char)
17. Speed (3 char)
18. Operating Chars (6 char)
19. Train Class (1 char)
20. Sleepers (1 char)
21. Reservations (1 char)
22. Connect Indicator (1 char)
23. Catering Code (4 char)
24. Service Branding (4 char)
25. Spare (1 char)
26. STP indicator (1 char. C = STP cancellation of permanent schedule, N = new STP schedule, O = STP overlay of permanent schedule, P = permanent.)

### 5.3.3 Basic Schedule Extra Details

The Basic Schedule Extra Details Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "BX")
2. Traction Class (4 char)
3. UIC Code (5 char)
4. ATOC Code (2 char)
5. Applicable Timetable Code (1 char)
6. Retail Train ID (8 char)
7. Source (1 char)
8. Spare (57 char)

### 5.3.4 Origin Station

The Origin Station Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "LO")
2. Location (8 char TIPLOC + Suffix)
3. Scheduled Departure Time (5 char)
4. Public Departure Time (4 char)
5. Platform (3 char)
6. Line (3 char)
7. Engineering Allowance (2 char)
8. Pathing Allowance (2 char)
9. Activity (12 char)
10. Performance Allowance (2 char)
11. Spare (37 char)

### 5.3.5 Intermediate Station

The Intermediate Station Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "LI")
2. Location (8 char TIPLOC + Suffix)
3. Scheduled Arrival Time (5 char)
4. Scheduled Departure Time (5 char)
5. Scheduled Pass (5 char)
6. Public Arrival (4 char)
7. Public Departure (4 char)
8. Platform (3 char)
9. Line (3 char)
10. Path (3 char)
11. Activity (12 char)
12. Engineering Allowance (2 char)
13. Pathing Allowance (2 char)
14. Performance Allowance (2 char)
15. Spare (20 char)

### 5.3.6 Changes En Route

The Changes En Route Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "CR")
2. Location (8 char TIPLOC + Suffix)
3. Train Category (2 char)
4. Train Identity (4 char)
5. Headcode (4 char)
6. Course Indicator (1 char)
7. Profit Centre Code/ Train Service Code (8 char)
8. Business Sector (1 char)
9. Power Type (3 char)
10. Timing Load (4 char)
11. Speed (3 char)
12. Operating Chars (6 chars)
13. Train Class (1 char)
14. Sleepers (1 char)
15. Reservations (1 char)
16. Connect Indicator (1 char)
17. Catering Code (4 char)
18. Service Branding (4 char)
19. Traction Class (4 char)
20. UIC Code (5 char)
21. Retail Train ID (8 char)
22. Spare (5 char)

### 5.3.7 Terminating Station

The Terminating Station Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "LT")
2. Location (8 char TIPLOC + Suffix)
3. Scheduled Arrival Time (5 char)
4. Public Arrival Time (4 char)
5. Platform (3 char)
6. Path (3 char)
7. Activity (12 char)
8. Spare (43 char)

### 5.3.8 Association

The Association Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "AA")
2. Transaction Type (1 char. N, D, or R as defined previously )
3. Base UID (6 char. One of the trains involved in the association)
4. Assoc UID (6 char. The other train involved)
5. Assoc Start date (6 char yymmdd)
6. Assoc End date (6 char yymmdd or 999999)
7. Assoc Days (7 char)
8. Assoc Cat (2 char the ASSOC-CAT For the base UID (first byte), followed by the ASSOC-CAT for the assoc. UID(second byte).).  
Note: Although this field isn't specified as having blanks in the Network Rail CIF specification, if blanks are supplied they will be carried forward.
9. Assoc Date Ind (1 char S = standard. N = over-next-midnight P = over-previous-midnight)  
Note: Although this field isn't specified as having blanks in the Network Rail CIF specification, if blanks are supplied they will be carried forward.
10. Assoc Location (7 char TIPLOC where association occurs)
11. Base Location Suffix (1 char, values are space or 2)
12. Assoc Location Suffix (1 char, values are space or 2)
13. Diagram Type (1 char, with the constant value T)
14. Association Type (1 char, P = passenger use, O = operating use)  
Note: Although this field isn't specified as having blanks in the Network Rail CIF specification, if blanks are supplied they will be carried forward.
15. Filler (31 char)
16. STP indicator (1 char (as defined previously))

### 5.3.9 TIPLOC Insert

The TIPLOC Insert Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "TI")
2. TIPLOC code (7 char)
3. Capitals (2 char defines capitalisation of TIPLOC)
4. NALCO (6 char)
5. NLC Check Character (1 char)
6. TPS Description (26 char)
7. STANOX (5 char TOPS location code)
8. PO MCP Code (4 char Post Office Location Code)
9. CRS Code (3 char)
10. Description (16 char description used in CAPRI)
11. Spare (8 char)



### 5.3.10 TIPLOC Amend

The TIPLOC Amend Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "TA")
2. TIPLOC code (7 char)
3. Capitals (2 char defines capitalisation of TIPLOC)
4. NALCO (6 char)
5. NLC Check Character (1 char)
6. TPS Description (26 char)
7. STANOX (5 char TOPS location code)
8. PO MCP Code (4 char Post Office Location Code)
9. CRS Code (3 char)
10. Description (16 char description used in CAPRI)
11. New TIPLOC (7 char, only present if TIPLOC change)
12. Spare (1 char)

### 5.3.11 TIPLOC Delete

The TIPLOC Delete record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "TD")
2. TIPLOC Code (7 char)
3. Spare (71 char)

### 5.3.12 Trailer Record

The Trailer Record contains the following data fields:

1. Record Identity (2 char identifier with the constant value "ZZ")
2. Spare (78 char)

## 5.4 Other CIF Files Format

The above format applies to all CIF format files namely the Full Basic Timetable Detail for Set A and Daily Updates to Timetable Detail for Set A.

## 5.5 TTIS Rejects File Format

This file contains details of train schedules that were rejected by TTIS validation software prior to transfer of the file set to Fujitsu Services. Examples of the reasons for rejection are schedules being incomplete or geographically inconsistent, or the train having the operating characteristic of 'Q' ("runs as required").

The file will have a header record of "Start of rejected trains file" and a trailer record "End of rejected trains file".

The data records will consist of a line containing the description of why the schedule was rejected, followed by several lines containing the complete train schedule from the source CIF file (Normal CIF format).

The TTIS Rejects file record contains the following data fields

1. Blank line
2. Rejection Error Message
3. LO CIF record type
4. LI CIF record type
5. LT CIF record type

## 5.6 Z Trains File Format

The Z-trains file is in the same format as for a normal CIF file, with exception of the header record which is almost empty, except that an asterisk is substituted for the last character in the current file reference. It's header format is:

1. Record Identity (2 char identifier with the constant value "HD")
2. Reserved (36 spaces)
3. '\*' (1 character asterisk)
4. Reserved (41 spaces)

## 5.7 CIF Set Details File Format

This file contains a single record type. This record contains the following field.

User Identity. (7 character field in the format Uxxxxxx where xxxxxx is the user identity in the CIF file header record. E.g. UCFCATE set A).

## 5.8 Fixed Leg File Contents

The Fixed Leg File (FLF) contains textual descriptions of fixed links. Fixed Links define non-timetable links between Timetable Engine Interchange stations. They provide the Timetable Engine with a means of connecting stations with a variety of modes (see below) where it is either not practical (due to volume or non-availability of data) or logical (e.g. walk links) to supply the Timetable Engine with timetabled data for the link.

### 5.8.1 FLF File Format

The file is a sequential text file containing variable length records. Records are terminated by carriage return line feed pairs under windows, and by "new line" under UNIX.

Commands are classified as follows:

- i) Mandatory program terminates without completing the processing if omitted
- ii) Optional program will not terminate without processing if omitted

Only the END command is mandatory; the remainder are optional, and may be used more than once. Within commands, the word/field separator is one blank character. Fixed link commands have 4 parameters: transit mode, transit time, and two CRS codes defining the Timetable Engine Interchange stations bounding the link.

Records are presented in the format:

ADDITIONAL LINK: WALK BETWEEN AHV AND NCM IN 10 MINUTES

All text is in upper case. All lines begin "ADDITIONAL LINK: " followed by the link method, which is one of "MERGE", "METRO", "WALK", "TUBE", "BUS", "FERRY", "TRANSFER". Locations are always CRS codes separated by " AND ", the first is preceded by "BETWEEN". The second is followed by "IN" and the times are always in minutes and followed by the word "MINUTES". The times are free format, without leading zeros (padded with a leading blank) so two minutes is shown as 2 MINUTES, twenty minutes is shown as 20 MINUTES. One minute is shown as 1 MINUTES.

When transfer type is MERGE, the line ends after the second location. There is no time data in this case.

The last FLF record is a file terminator, simply "END".

### **5.8.2 Merge**

Optional. The timetable engine makes no use of Merge links, which exist purely to control the macro rail network definition that the timetable data generation program generates. This command is relevant to engines based around CATE.

### **5.8.3 Metro**

Optional. Defines a Fixed Link of type 'Metro' between the CRS codes, with transit time nnn.

### **5.8.4 Walk**

Optional. Defines a Fixed Link of type 'Walk' between the CRS codes, with transit time nnn.

### **5.8.5 Tube**

Optional. Defines a Fixed Link of type 'Tube' between the CRS codes, with transit time nnn.

### **5.8.6 Bus**

Optional. Defines a Fixed Link of type 'Bus' between the CRS codes, with transit time nnn.

### **5.8.7 Transfer**

Optional. Defines a Fixed Link of type 'Transfer' between the CRS codes, with transit time nnn. The 'Transfer' mode is normally used where it is inappropriate to dictate whether the transit should be made by bus, walk, taxi etc.

### **5.8.8 Ferry**

Optional. Defines a Fixed Link of type 'Ferry' between the CRS codes, with transit time nnn.

### **5.8.9 Train**

Optional. This command is not in common use and may not be fully supported. As for the other Fixed Link modes, it provides the Timetable Engine with an untimetabled link between two stations, whose mode is defined as 'train'.

### **5.8.10 File Terminator**

Mandatory 'End' of File record. Must appear after all Fixed Link definitions.

## 5.9 Master Station Name File Contents

The Master Station Name (MSNF) contains textual descriptions of station names, interchange times and Ordnance Survey reference codes.

### 5.9.1 MSNF File Format

The file is a sequential text file containing fixed length 81 character records, padded with trailing spaces as necessary. Records are terminated by carriage return line feed pairs under windows, and by "new line" under UNIX. The file contains different record types which can be identified by the 'record identity', the first byte of a record.

Records are presented in the format:

```
A  WOODSMOOR          0WMOR  WSR  WSR13907E63877 0          480
```

All text is in upper case. The last record is 'End of File'.

The file sequence structure is included below for illustration purposes.

- i. File header record
- ii. Physical station definitions
- iii. Alias definitions
- iv. Group definitions
- v. Non-BR location definitions
- vi. Route identifier definitions
- vii. File trailer record
- viii. 'last written by' record
- ix. unique string identifier record
- x. file history record
- xi. 440 CRS usage records
- xii. end of file record.

### 5.9.2 MSNF Record Layouts

The **Header** 'A' record contains the following data fields:

- 1 Record Type (1 char with a constant value 'A')
- 2 Reserved (29 spaces)
- 3 File-Specification (12 char constant value 'FILE-SPEC=05')
- 4 Reserved (1 space)
- 5 Version (4 char containing MSNF Editor program version string, format n.nn)
- 6 Reserved (1 space)
- 7 Creation Date (8 char containing date of run creating this file, format dd/mm/yy)
- 8 Reserved (1 space)
- 9 Creation Time (8 char containing time of run creating this file, format hh.mm.ss)
- 10 Reserved (1 space)
- 11 Sequence number (4 number containing integer file sequence number, format nnnn that is incremented by each successful editor run)
- 12 Reserved (10 space)

The **Physical Station** 'A' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'A')
2. Reserved (4 char)
3. Station Name (26 char)
4. Reserved (4 char)
5. CATE Interchange status (1 char, values are blank, or '0', '1', '2', '3' or '9')
6. TIPLOC Code (7 char)
7. CRS Reference Code (3 char)
8. Reserved (3 char)
9. CRS Code (3 char)
10. Ordnance Survey Grid Ref East (5 char, values are in 0.1 km units)
11. Blank/Estimate (1 char, value is blank or 'E' if Grid Reference is an estimate)
12. Ordnance Survey Grid Ref North (5 char, values are in 0.1 km units)
13. Minimum Change Time (2 char, value in minutes for interchanges, zero otherwise)
14. Reserved (1 char)
15. Footnote/Closed/Staff/Not-advertised code) (1 char, values are blank, '0' ... '9', 'C', 'A', 'P', 'S', 'N')
16. Reserved (11 char)
17. Sub-sector code (3 char, value is blank if non-interchange)

The **GB Timetable numbers** 'B' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'B')
2. Reserved (4 char)
3. Station name (26 character name)
4. Reserved (4 spaces)
5. GBTT numbers (45 character field containing 4-character GB Timetable number(s), one or more will be present, left justified.

The **Comment Record** 'C' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'C')
2. Comment (79 character comment.)

The **Alias** 'L' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'L')
2. Reserved (4 char)
3. Station Name (26 char)
4. Reserved (5 char)
5. Station Alias (26 char)
6. Reserved (20 char)

The **Group** Definition 'G' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'G')
2. Reserved (4 char)
3. Station Name (26 char)
4. Reserved (5 char)
5. Group Member CRS Codes (39 char, from one to ten codes in the format: 3 char CRS code, 1 blank, next 3 char CRS code etc)
6. Reserved (6 char)

Note: Although the RJIS Architecture has the capability to handle more than ten stations in a group, no amendments are made to the supplied MSNF data. Therefore, the 'G' record is distributed in the same format as it is received.

The **Non-BR** Location 'R' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'R')
2. Reserved (4 char)
3. Non-BR Location Name (26 char)
4. Reserved (3 char)
5. CRS code of Non BR location (3 char)
6. Mode Character (1 char, valid codes are defined in Timetable Engine configuration file routxxxx.dat, the 'NBR String Definition' record has the format '#NBR code a = text-string' where a is the mode code and string is its translation.
  - #NBR code B = Bus
  - #NBR code F = Ferry
  - #NBR code M = Manchester Metro (Southbound)
  - #NBR code N = Manchester Metro (Northbound)
  - #NBR code T = Tyne & Wear Metro (Southbound)
  - #NBR code U = Tyne & Wear Metro (Northbound)
7. This optional record may occur more than once and allows definition of non-BR location mappings, i.e. associating a non-rail-served location with one which is rail-served.)
8. Distance in miles (2 char)
9. Journey time in minutes (2 char)
10. Free text field (39 char, including one '%' character in any byte; text before the '%' is for weekdays, and after is for Sundays)

The **Routeing** Location 'V' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'V')
2. Reserved (4 char)
3. Routeing Location Name (26 char, i.e. a collective name for the group)
4. Reserved (5 char)

5. Routeing Location CRS Codes (16 char, from one to four codes in the format: 3 char CRS code, 1 blank, next 3 char CRS code etc)
6. Reserved (29 char)

The **File Trailer** 'Z' record contains the following data fields:

1. Record Type (1 Char identifier with the constant value 'Z')
2. Reserved (4 char)
3. 'ZZZZZZZZZZ' (10 char)
4. Reserved (15 char)
5. 'END OF MSNF' (11 char)
6. Reserved (40 char)

The **Last Written By** record contains the following data fields:

1. Record Type (1 char identifier with the constant value 'Z')
2. Reserved (4 char)
3. 'ZZZZZZZZZZZZZZZZ' (15 char)
4. Reserved (10 char)
5. 'LAST WRITTEN BY MSED. CRS AMENDMENTS ONLY' (41 char)

or

'LAST WRITTEN BY MSED. NON-CRS AMENDMENTS ONLY' (45 char)

or

'LAST WRITTEN BY CIFU' (20 char)

6. Reserved (10 or 6 or 31 char)

The **Unique Identifier String** record contains the following data fields:

*When written by CIFU:*

1. Serial number of update (4 char)
2. Reserved (1 char)
3. CIFU program identifier (4 char)
4. Reserved (1 char)
5. Date of CIFU program run (6 char)
6. Reserved (1 char)
7. Time of CIFU program run (6 char)
8. Reserved (1 char)
9. Blank for full generation, else date and time of creation of first CIF update file (10 char)
10. Blank for full generation, else number of CIF update files processed in update (2 char)
11. Reserved (1 char)
12. Blank for full generation, else date and time of creation of last of CIF update files processed in update (10 char)
13. Reserved (1 char)
14. CIF extract sequence letters (21 char)
15. Date (ddmmyy) and time (hhmm) of earliest CIF extract processed

When written by **MSED**:

1. 'MSED' (4 char)
2. Reserved (76 char)

The '**File History**' record contains the following data fields:

1. 'CIFU' or 'MSED' (4 char)
2. Reserved (1 char)
3. CIFU or MSED program version number (4 char)
4. Reserved (1 char)
5. Date of CIFU or MSED program run (8 char)
6. Reserved (1 char)
7. Time of CIFU or MSED program run (8 char)

The '**CRS Usage**' record contains 440 records, each holding 40 two-byte values of:

- 1 CRS does not exist
- 0 CRS exists but no trains use it currently
- 1 CRS exists and one or more trains use it currently

The '**End of File**' record contains the following data fields:

1. 'End of File' (11 char)
2. Reserved (69 char)



## 6 Example BTD data.

The data presented below has been extracted from a CIF file and is reproduced for illustration purposes.

/ Association between P39948 and P39725 occurring at Paddington

AANP39948P397259808309808300000001 PADTON T C

/ Train schedule for Train C53290 between Bedford and Croydon

BSNC532909805249809200000001 POO2T07 124207004 EMU319 100D B P  
BX TLYTL123400  
LOBEDFDM 0841 08411 SL TBH  
LIBEDFDS 0843 00000000  
LIFLITWCK 0850 0850H 08500850 T  
LIHRLG 0854 0854H 08540854 T  
LILEAGRVE 0859H0900 09000900 T 1  
LILUTON 0904 0905 090409041 T 1H  
LIHRPNDN 0912H0913 09120912 T 1  
LISTALBCY 0919 0920 091809181 T  
LIHDON 0930H00000000  
LIWHMPSTM 0933 00000000  
LIKNTSHTN 0935H00000000 MOL 2  
LIKNSXMCL 0941H0943 09420943A T  
CRFRNDNLT OO2T07 124612004 EMU319 100D B  
LIFRNDNLT 0945H0946H 094609463 T  
LICTMSLNK 0947H000000002  
LIBLFR 0949 0950 094909504 T  
LIMTRPLTJ 0953H000000000  
LILDNBDE 0955 0956 095509565 5 T  
LISPAROAD 0958H00000000  
LIBRCKLAJ 1000 00000000 FL 3  
LINORWDJ 1010 000000004  
LINORWDFJ 1011 00000000 SL  
LIWNDMLBJ 1011H00000000 SL  
LTECROYDN 1013 10136 TF

## 7 Example TTIS Rejects data

The data presented below has been extracted from a TTIS Rejects file and is reproduced for illustration purposes.

Start of rejected trains file

No stations found between Gobowen and Cardiff Central (158 km)  
BSNC146370308300308300000010 1XX1Z32 125434000 D 385 095 N  
BX WBY  
LOCREWE 0745 074512 TB  
LICREWESW 0748 00000000  
LIBESTTSB 0756H00000000  
LICHST 0806H0809 080708094 T  
LICHSTRSJ 0810 00000000  
LISLNYJN 0812 00000000  
LIWREXHMG 0825H0827 082608271 T  
LIGOBOWEN 0841 0842 08410842 T  
LTCRDFCEN 1059 1059 TF

## 8 Example CIF Set DETAILS data.

The data presented below has been extracted from a CIF Set Details file and is reproduced for illustration purposes.

```
/!! Start of file
/!! Content type: CIF Set Details
/!! Sequence: 000
/!! Generated: 01/09/03
/!! Exporter: RjUhrTTT
UCFCATE
/!! End of file (1 records) (01/09/2003)
```

## 9 Example FLF data.

The data presented below has been extracted from an FLF and is reproduced for illustration purposes.

```
/!! Start of file
/!! Content type: flf
/!! Sequence: 000
/!! Generated: 01/09/03
/!! Exporter: RjUhrTTT
ADDITIONAL LINK: MERGE BETWEEN PRR AND WGN
ADDITIONAL LINK: METRO BETWEEN ALT AND DGT IN 32 MINUTES
ADDITIONAL LINK: TUBE BETWEEN ZBS AND LBG IN 47 MINUTES
ADDITIONAL LINK: WALK BETWEEN BRI AND XDU IN 1 MINUTES
ADDITIONAL LINK: BUS BETWEEN COF AND COK IN 55 MINUTES
ADDITIONAL LINK: TRANSFER BETWEEN LIV AND LVS IN 35 MINUTES
ADDITIONAL LINK: FERRY BETWEEN CUL AND LAR IN 40 MINUTES
END
/!! End of file (8 records) (01/09/2003)
```



## 11 SYSTEM LIMITS.

Various limits are set on the data which can be extracted from TSDB to CIF (and hence forward in to RJIS). The limits detailed below apply to the data before it reaches the RJIS data factory and are reproduced here for information purposes.

- The maximum number of events on a schedule is 150. By comparison, the TSDB limit for the total number of events on a UID is 350.
- The maximum number of schedules that can be created on CIF for a UID is 50 permanent and 50 STP (49 in some circumstances). This could theoretically lead to more than 100 schedules in total for an STP user due to the interaction of permanent and STP dates.
- The number of associations is limited to 50 permanent and 50 STP associations for a pair of trains with the same diagram type/location.
- The maximum number of changes-en-route for a schedule is 25.
- Within a permanent schedule, STP data must not cause more than 10 different schedules for an STP user. STP trains which have associations, must not have more than 10 sets of dates.
- If any of the system limits are exceeded, the train will be rejected CIF and a report generated for the System Controller.
- In addition, certain other error conditions can be detected on trains valid on TSDB. These will result in error messages to the System Controller and, in some cases, the train being rejected by CIF.

## 12 Datafeed Service

### 12.1 Provision

The Timetables Datafeed service is provided as follows

- The Datafeed is to a single site
- The Datafeed is transferred by electronic transfer or on an agreed physical media by post or other delivery service. These can include cartridge tape and CD.
- The transfers are either a full file data set or incremental changes.
- Backup copies of the files may be kept by the users who have been issued a backup licence. These will be issued free of charge.
- Note Fujitsu will issue a full version of the TTIS CIF file at the commencement of the TTIS CIF service.
- Customers who subscribed to both the CIF and the TTIS CIF datafeed will need to supply different transfer locations to avoid overwriting files with the same name.

### 12.2 Transfer Mechanism

The datafeed is scheduled on the Data Factory to run at specific times or after the corresponding files have been imported into the Data Factory.

FTP (File Transfer Protocol) automatically transmits the file to the customer's server. For each file transferred it creates a temporary filename that is different from that defined in the above section. After the file has been transmitted successfully the file is renamed to the expected file. This way the customer will know when the transfer is complete.

The temporary file may be monitored by the customer, if desired, to show progress of the transfer.

It is the Customer's responsibility to ensure that the most recent file is applied to their system.

It is the Customer's responsibility to inform Fujitsu Services Ltd of any errors that may have occurred. FTP will re-send packets of information where there is an error across the network.

It is the Customer's responsibility to ensure necessary space and transfer mechanisms are in place. Sizing information for this datafeed is provided in section 4.

Each new file is available on the RJIS server for one month, after which it is deleted.

A contents file is produced that lists the filenames that form a given datafeed set. The contents file itself is not listed within the file.

The file is compressed to reduce file sizes and speed up the exporting process, and is readable using WINZIP.

Users of UNIX systems will be supplied with instructions on how to unpack the datafeed file (with particular references to parameters for new lines).

## 12.3 Data Integrity

The Timetable information as supplied to RJIS has been consistency checked by SchlumbergerSema before submission to RJIS. No further validation is undertaken by RJIS.

## 12.4 Security

For each customer who wants to receive electronic copies they will need to supply an IP address for RJIS to communicate with.

Fujitsu Services Ltd recommends a separate user is set up for the sole use of receiving datafeeds and has a password associated with it.

Customers who feel that security is a particular issue may receive specially encrypted datafeed files. This is a separate service type.

## 12.5 Communications

The network for the RJIS system is described in detail in document sp0007-RJIS Network Design Specification and in sp0008-RJIS Implementation Specification.

All files sent via the network will use FTP connected via TCP/IP. This requires that each external system that wants to receive files from RJIS must provide an IP address and directory name into which files are going to be placed.

Communication lines used for full file transfer should be high speed links, 2mb per second. If "update only" files are distributed then this line speed could be reduced to as low as 64kb per second. Advice will be given by Fujitsu Services Ltd on communications equipment to individual customers taking up this service.

## 12.6 Documentation

Operating documentation will be issued to customers taking this service. This will include:

- Operating Instructions
- An indication of File size
- Estimated transfer time
- Fault check list

## 13 REGISTERING FOR THE SERVICE

If this datafeed meets your requirements, you agree with the customers responsibilities (see section 12) and would like to obtain this service, then initial contact should be made to :-

RSP  
3<sup>rd</sup> Floor  
40 Bernard Street  
London  
WC1N 1BY

Tel: 0207 863 0814