



Rail Settlement Plan

Timetable Information Data Feed Interface Specification

RSP Document Ref: RSPS5046

Version: 01-00



Version History

| Version | Date | Author | Comments |
|---------|-------------|----------------------------|--|
| 00-00-A | 24-Jan-2014 | Edna Kelly | First draft |
| 00-00-B | 21-May-2014 | Edna Kelly | Reviewed by iBlocks JIRA STD-612 Copyright text to be added – addressed |
| 00-00-C | 22-May-2014 | Edna Kelly Neil Barkham | Addressed internal review comments. |
| 00-00-D | 05-Jun-2014 | Neil Barkham | More internal review comments addressed. |
| 00-00-E | 16-Jul-2014 | Neil Barkham | Final External Review comments addressed. |
| 01-00 | 04-Aug-2014 | Neil Barkham | Issued. |

Release Control

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

| Organisation | Role | Name |
|--------------|-----------------------|--------------------------|
| RSF | Approval of Standards | Retail Systems Forum |
| RSP | Document Owner | RSP Compliance Standards |

Distribution

| Organisation | Role | Name |
|-----------------------|------|------|
| RSP TIS Accreditation | N/A | N/A |
| TOCs | N/A | N/A |
| TIS Suppliers | N/A | N/A |

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Glossary

| Term | Meaning |
|-------------|--|
| ATOC | Association of Train Operating Companies |
| BTD | Basic Timetable Detail |
| CIF | Common Interface File |
| CRS | Computerised Reservation System |
| DTD | Data Transformation and Distribution Service |
| FLF | Fixed Links File |
| FTP | File Transfer Protocol |
| iBlocks | Provider of DTD service |
| MSNF | Master Station Names File |
| NLC | National Location Code |
| PO MCP | Post Office Location Code |
| RJIS | Rail Journey Information Service |
| RSF | Retail Systems Forum |
| RSP | Rail Settlement Plan |
| SFTP | Secure File Transfer Protocol |
| STP | Short Term Plan |
| TIPLOC | Timing Point Location |
| TTIS | Time Table Information Service |
| UIC | Unique Identifier Code |
| UID | Unique Identifier |

1. Acknowledgements

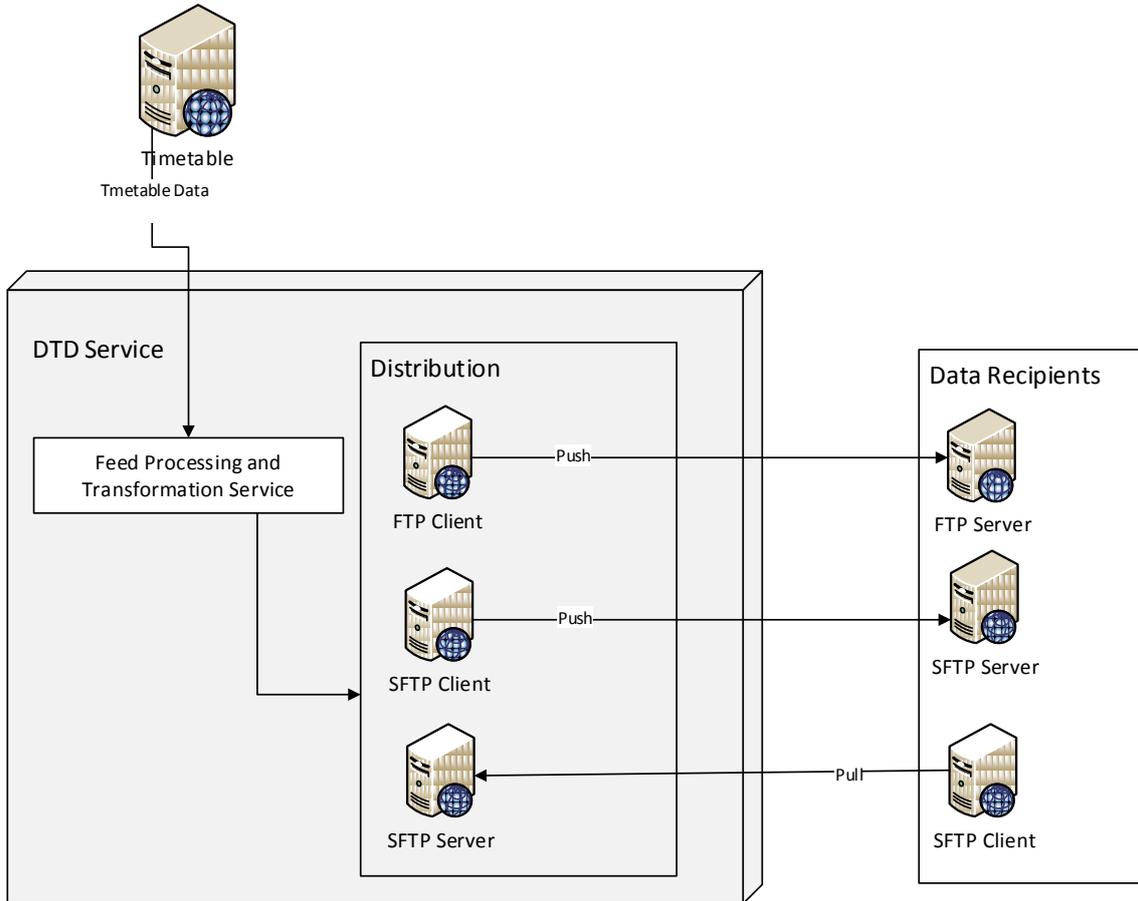
- 1.1 The information provided in this document, regarding the CIF format, is reproduced from the 'CIF End User Specification' which is copyright Network Rail.
- 1.2 The information provided in this document regarding data content is reproduced from the 'Lists of Valid Values' Appendix in the 'CIF End User Specification'.
- 1.3 The 'Master Station Names' file and the 'Fixed Links' file are provided to the 'Data Transformation and Distribution' service (DTD) by the Worldline TTIS service.

2. Scope

- 2.1 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 iBlocks Ltd to reproduce Network Rail documentation relating to CIF, and to permit DTD to take CIF data, manipulate it (including the addition of Bus and Ferry Operator's data), and present the modified data as a Data Feed to external parties in CIF format.
- 2.2 The scope of this document is the interface specification of Timetable Information Data Feed provided by the DTD service which is a like for like replacement of the RJIS Data Factory.
- 2.3 This document describes the file structure of all the Timetable files of the Timetable Feed and provides technical details of how these files are made available to registered recipients of the data.
- 2.4 The DTD service is responsible for managing and distributing other Data Feeds and the following documents describe the interfaces:
 - RSPS5045 DTD Fares Feed Interface Specification
 - RSPS4047 DTD National Routeing Guide Feed Interface Specification

3. Approach

3.1 The diagram below is an overview of the 'Feed Processing and Transformation Service', which transforms the imported feed data and generates output feed files. The output feed files are distributed to those registered Data Feed recipients with appropriate entitlements via SFTP Pull, FTP Push or SFTP Push. The Data Feeds contain an approved set of files.



4. Structure

- 4.1 The Data Feeds are delivered in fixed format flat text files.
- 4.2 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.
- 4.3 The 'Fixed Links' file is always a full file and applies to the currently Live CIF data only.
- 4.4 The 'Master Station Names' file is always a full file and applies to the currently Live CIF data only.
- 4.5 The 'TTIS Reject' file contains records that have been rejected by the TTIS team before sending the CIF data to DTD.
- 4.6 To maintain business continuity for existing DTD Data Feed customers, the filenames used in the TTIS Timetable Data Feed remain the same as they are for the original timetable Data Feed, with the exception of any new files added.
- 4.7 The following export file types are defined for the TTIS CIF Timetable Data Feed (where *nnn* is a sequence number defined by the file's exporter):

| File type | Contents | Typical Size ¹ | Generic filename |
|---|---|---------------------------|------------------------------|
| Full Basic Timetable Detail for Set A | Full CIF file containing all timetable details for Set A in TTIS CIF format. | 500Mb | 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, this file will only indicate set 'A' by the presence of a single record containing 'UCFCATE'. | < 1Kb | RJTTFnnn.SET |
| 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. | 65Kb | 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 that have been rejected by the TTIS team before sending the CIF data to DTD. | 1Mb | RJTTFnnn.REJ |
| Contents file | This file lists all the filenames included in the timetable Data Feed set, with the exception of the contents file itself. Two of these files exist; one for customers receiving a full Data Feed, 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 |

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

¹ The typical size is for guidance only. The CIF file size for example may vary from 2Mb to 300Mb.

5. Key Technical Details

5.1 Structure

5.1.1 The Timetable Data Feed will comprise a number of separate files containing data records. Each file will comprise an informational header, followed by an ordered sequence of records, followed by a terminator. The records are fixed format; each record contains fields of the length described in the body of this document.

5.1.2 Every line of every file will be either a comment (introduced by a leading '/' character) or a record. Every file will commence with the following sequence of comments:

```
#!/ Start of file
#!/ Content type:  type
#!/ Sequence:     nnn
#!/ Records:      nnnnnnn
#!/ Generated:    dd/mm/yyyy
#!/ Exporter:     DTD_module version
```

where *type* is one of a fixed list of strings naming the file types below.

5.1.3 The sequence number listed in the header will match that in the filename; the number of records reported will not include comments.

5.1.4 Every file will terminate with a comment of the form:

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

This is to provide some protection against inadvertent file truncation.

5.1.5 The file which contains details of the files sent will also include these comments. Each non-comment record in this file will contain an export filename (as shown in section 4.7).

5.2 Basic Timetable Detail File contents

5.2.1 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 section 1, 'Acknowledgements' 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.

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

5.2.3 Schedule Records

5.2.3.1 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.

5.2.3.2 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 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.

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

5.2.4 Associations Records

5.2.4.1 The file also contains train association records. These document the link between a pair of trains. Associations are passed independently of train schedules.

5.2.4.2 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.

5.2.4.3 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.

5.2.4.4 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).

5.2.4.5 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.

5.2.4.6 An association record is identified as:

- Base-UID/Assoc-UID/Start-date/Diagram Type/
- Location (Assoc-Location/Base-loc-suff/Assoc-loc-suff)

5.2.5 TIPLOC Codes

5.2.5.1 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.

5.3 BTD File Format

5.3.1 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. The file contains different record types which can be identified by the 'record identity', the first two bytes of a record.

5.3.2 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 sequence²
 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)

5.3.3 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
```

5.3.4 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.

5.3.5 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.

5.3.6 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 DTD Data Feed will also implement them.

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

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

² 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

- 5.3.9 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.
- 5.3.10 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.
- 5.3.11 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.
- 5.3.12 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.

5.4 BTD Record Layouts

5.4.1 Header Record

5.4.1.1 The Header Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|------------------------|--------|----------|--|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'HD'. |
| 2 | File Identity | 20 | 3-22 | |
| 3 | Date of Extract | 6 | 23-28 | Format ddmmyy defining the date that the BTD extract file was created. |
| 4 | Time of Extract | 4 | 29-32 | hhmm defining the time that the BTD extract file was created. |
| 5 | Current File Reference | 7 | 33-40 | Unique file reference. |
| 6 | Last-file-reference | 7 | 41-47 | Unique file reference. |
| 7 | Update Indicator | 1 | 48 | 'U'=Update. 'F'=Full extract. |
| 8 | Version | 1 | 49 | Version identifier of CIF software. |
| 9 | Extract start date | 6 | 50-55 | Same as Field 3 above. |
| 10 | Extract end date | 6 | 56-61 | |
| 11 | Spare | 20 | 62-81 | |

5.4.2 Basic Schedule

5.4.2.1 The Basic Schedule Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|--|--------|----------|--|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'BS'. |
| 2 | Transaction Type | 1 | 3-3 | 'N' = New. 'D' = Delete. 'R' = Revise. |
| 3 | Train UID | 6 | 4-9 | Unique train Identifier. |
| 4 | Date Runs From | 6 | 10-15 | yymmdd |
| 5 | Date Runs To | 6 | 16-21 | yymmdd or 999999 if on-going. |
| 6 | Days Run | 7 | 22-28 | |
| 7 | Bank Holiday Running | 1 | 29-29 | |
| 8 | Train Status | 1 | 30-30 | |
| 9 | Train Category | 2 | 31-32 | |
| 10 | Train Identity | 4 | 33-36 | |
| 11 | Headcode | 4 | 37-40 | |
| 12 | Course Indicator | 1 | 41-41 | |
| 13 | Profit Centre Code/ Train Service Code | 8 | 42-49 | |
| 14 | Business Sector | 1 | 50-50 | |
| 15 | Power Type | 3 | 51-53 | |
| 16 | Timing Load | 4 | 54-57 | |
| 17 | Speed | 3 | 58-60 | |
| 18 | Operating Chars | 6 | 61-66 | |
| 19 | Train Class | 1 | 67-67 | |
| 20 | Sleepers | 1 | 68-68 | |
| 21 | Reservations | 1 | 69-69 | |
| 22 | Connect Indicator | 1 | 70-70 | |
| 23 | Catering Code | 4 | 71-74 | |
| 24 | Service Branding | 4 | 75-78 | |
| 25 | Spare | 1 | 79-79 | |
| 26 | STP indicator | 1 | 80-80 | 'C' = STP cancellation of permanent schedule. 'N' = New STP schedule. 'O' = STP overlay of permanent schedule. 'P' = Permanent. |

5.4.3 Basic Schedule Extra Details

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

| Field | Field description | Length | Position | Notes |
|-------|---------------------------|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'BX'. |
| 2 | Traction Class | 4 | 3-6 | |
| 3 | UIC Code | 5 | 7-11 | |
| 4 | ATOC Code | 2 | 12-13 | |
| 5 | Applicable Timetable Code | 1 | 14-14 | |
| 6 | Retail Train ID | 8 | 15-22 | |
| 7 | Source | 1 | 23-23 | |
| 8 | Spare | 57 | 24-80 | |

5.4.4 Origin Station

5.4.4.1 The Origin Station Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|--------------------------|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'LO'. |
| 2 | Location | 8 | 3-10 | TIPLOC + Suffix. |
| 3 | Scheduled Departure Time | 5 | 11-15 | |
| 4 | Public Departure Time | 4 | 16-19 | |
| 5 | Platform | 3 | 20-22 | |
| 6 | Line | 3 | 23-25 | |
| 7 | Engineering Allowance | 2 | 26-27 | |
| 8 | Pathing Allowance | 2 | 28-29 | |
| 9 | Activity | 12 | 30-41 | |
| 10 | Performance Allowance | 2 | 42-43 | |
| 11 | Spare | 37 | 44-80 | |

5.4.5 Intermediate Station

5.4.5.1 The Intermediate Station Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|--------------------------|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'LI'. |
| 2 | Location | 8 | 3-10 | TIPLOC + Suffix. |
| 3 | Scheduled Arrival Time | 5 | 11-15 | |
| 4 | Scheduled Departure Time | 5 | 16-20 | |
| 5 | Scheduled Pass | 5 | 21-25 | |
| 6 | Public Arrival | 4 | 26-29 | |
| 7 | Public Departure | 4 | 30-33 | |
| 8 | Platform | 3 | 34-36 | |
| 9 | Line | 3 | 37-39 | |
| 10 | Path | 3 | 40-42 | |
| 11 | Activity | 12 | 43-54 | |
| 12 | Engineering Allowance | 2 | 55-56 | |
| 13 | Pathing Allowance | 2 | 57-58 | |
| 14 | Performance Allowance | 2 | 59-60 | |
| 15 | Spare | 20 | 61-80 | |

5.4.6 Changes En Route

5.4.6.1 The Changes En Route Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|--|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'CR'. |
| 2 | Location | 8 | 3-10 | TIPLOC + Suffix. |
| 3 | Train Category | 2 | 11-12 | |
| 4 | Train Identity | 4 | 13-16 | |
| 5 | Headcode | 4 | 17-20 | |
| 6 | Course Indicator | 1 | 21-21 | |
| 7 | Profit Centre Code/ Train Service Code | 8 | 22-29 | |
| 8 | Business Sector | 1 | 30-30 | |
| 9 | Power Type | 3 | 31-33 | |
| 10 | Timing Load | 4 | 34-37 | |
| 11 | Speed | 3 | 38-40 | |
| 12 | Operating Chars | 6 | 41-46 | |
| 13 | Train Class | 1 | 47-47 | |
| 14 | Sleepers | 1 | 48-48 | |
| 15 | Reservations | 1 | 49-49 | |
| 16 | Connect Indicator | 1 | 50-50 | |
| 17 | Catering Code | 4 | 51-54 | |
| 18 | Service Branding | 4 | 55-58 | |
| 19 | Traction Class | 4 | 59-62 | |
| 20 | UIC Code | 5 | 63-67 | |
| 21 | Retail Train ID | 8 | 68-75 | |
| 22 | Spare | 5 | 76-80 | |

5.4.7 Terminating Station

5.4.7.1 The Terminating Station Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|------------------------|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'LT'. |
| 2 | Location | 8 | 3-10 | TIPLOC +Suffix. |
| 3 | Scheduled Arrival Time | 5 | 11-15 | |
| 4 | Public Arrival Time | 4 | 16-19 | |
| 5 | Platform | 3 | 20-22 | |
| 6 | Path | 3 | 23-25 | |
| 7 | Activity | 12 | 26-37 | |
| 8 | Spare | 43 | 38-80 | |

5.4.8 Association

5.4.8.1 The Association Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|-----------------------|--------|----------|--|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'AA'. |
| 2 | Transaction Type | 1 | 3-3 | 'N' = New. 'D' = Delete. 'R' = Revise. |
| 3 | Base UID | 6 | 4-9 | One of the trains involved in the association. |
| 4 | Assoc UID | 6 | 10-15 | The other train involved. |
| 5 | Assoc Start date | 6 | 16-21 | yyymmdd |
| 6 | Assoc End date | 6 | 22-27 | yyymmdd or 999999. |
| 7 | Assoc Days | 7 | 28-34 | |
| 8 | Assoc Cat | 2 | 35-36 | 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 | 37-37 | '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 | 38-44 | TIPLoc where association occurs. |
| 11 | Base Location Suffix | 1 | 45-45 | Values are space or 2. |
| 12 | Assoc Location Suffix | 1 | 46-46 | Values are space or 2. |
| 13 | Diagram Type | 1 | 47-47 | With the constant value 'T'. |
| 14 | Association Type | 1 | 48-48 | '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 | 49-79 | |
| 16 | STP indicator | 1 | 80-80 | 'C' = STP cancellation of permanent schedule. 'N' = New STP schedule. 'O' = STP overlay of permanent schedule. 'P' = Permanent. |

5.4.9 TIPLOC Insert

5.4.9.1 The TIPLOC Insert Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|---------------------|--------|----------|-----------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'TI'. |
| 2 | TIPLOC code | 7 | 3-9 | |
| 3 | Capitals | 2 | 10-11 | Defines capitalisation of TIPLOC. |
| 4 | NALCO | 6 | 12-17 | |
| 5 | NLC Check Character | 1 | 18-18 | |
| 6 | TPS Description | 26 | 19-44 | |
| 7 | STANOX | 5 | 45-49 | TOPS location code. |
| 8 | PO MCP Code | 4 | 50-53 | Post Office Location Code. |
| 9 | CRS Code | 3 | 54-56 | |
| 10 | Description | 16 | 57-72 | Description used in CAPRI. |
| 11 | Spare | 8 | 73-80 | |

5.4.10 TIPLOC Amend

5.4.10.1 The TIPLOC Amend Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|---------------------|--------|----------|-----------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'TA'. |
| 2 | TIPLOC code | 7 | 3-9 | |
| 3 | Capitals | 2 | 10-11 | Defines capitalisation of TIPLOC. |
| 4 | NALCO | 6 | 12-17 | |
| 5 | NLC Check Character | 1 | 18-18 | |
| 6 | TPS Description | 26 | 19-44 | |
| 7 | STANOX | 5 | 45-49 | TOPS location code. |
| 8 | PO MCP Code | 4 | 50-53 | Post Office Location Code. |
| 9 | CRS Code | 3 | 54-56 | |
| 10 | Description | 16 | 57-72 | Description used in CAPRI. |
| 11 | New TIPLOC | 7 | 73-79 | Only present if TIPLOC change. |
| 12 | Spare | 1 | 80-80 | |

5.4.11 TIPLOC Delete

5.4.11.1 The TIPLOC Delete record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'TD'. |
| 2 | TIPLOC code | 7 | 3-9 | |
| 3 | Spare | 71 | 10-80 | |

5.4.12 Trailer Record

5.4.12.1 The Trailer Record contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|-------------------------------|
| 1 | Record Identity | 2 | 1-2 | With the constant value 'ZZ'. |
| 2 | Spare | 78 | 3-80 | |

5.5 Other CIF Files Format

5.5.1 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'.

5.6 TTIS Rejects File Format

5.6.1 This file contains details of train schedules that were rejected by TTIS validation software prior to transfer of the file set to iBlocks. 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").

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

5.6.3 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).

5.6.4 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.

5.7 Z Trains File Format

5.7.1 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)

5.8 CIF Set Details File Format

5.8.1 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)

5.9 Fixed Leg File Contents

The Fixed Leg File (FLF) contains textual descriptions of fixed links. Fixed Links define non-timetabled 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.

5.9.1 FLF File Format

5.9.1.1 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.

5.9.1.2 Commands are classified as follows:

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

5.9.1.3 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.

5.9.1.4 Records are presented in the format:

```
ADDITIONAL LINK: WALK BETWEEN AHV AND NCM IN 10 MINUTES
```

5.9.1.5 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.

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

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

5.9.2 Merge

5.9.2.1 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.

5.9.3 Metro

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

5.9.4 Walk

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

5.9.5 Tube

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

5.9.6 Bus

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

5.9.7 Transfer

5.9.7.1 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.

5.9.8 Ferry

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

5.9.9 Train

5.9.9.1 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 un-timetabled link between two stations, whose mode is defined as 'train'.

5.9.10 File Terminator

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

5.10 Master Station Name File Contents

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

5.10.2 MSNF File Format

5.10.2.1 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. The file contains different record types which can be identified by the 'record identity', the first byte of a record.

5.10.2.2 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'.

5.10.2.3 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

5.10.3 MSNF Record Layouts

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

| Field | Field description | Length | Position | Notes |
|-------|--------------------|--------|----------|--|
| 1 | Record Type | 1 | 1-1 | Constant value 'A'. |
| 2 | Reserved | 29 | 2-30 | |
| 3 | File-Specification | 12 | 31-42 | Constant value 'FILE-SPEC=05'. |
| 4 | Reserved | 1 | 43-43 | |
| 5 | Version | 4 | 44-47 | MSNF Editor program version string, format 'n.nn'. |
| 6 | Reserved | 1 | 48-48 | |
| 7 | Creation Date | 8 | 49-56 | Date of run creating this file, format 'dd/mm/yy'. |
| 8 | Reserved | 1 | 57-57 | |
| 9 | Creation Time | 8 | 58-65 | Time of run creating this file, format 'hh.mm.ss'. |
| 10 | Reserved | 1 | 66-66 | |
| 11 | Sequence number | 4 | 67-70 | File sequence number, format 'nnnn' that is incremented by each successful editor run. |
| 12 | Reserved | 10 | 71-80 | |

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

| Field | Field description | Length | Position | Notes |
|-------|---|--------|----------|---|
| 1 | Record Type | 1 | 1-1 | Constant value 'A'. |
| 2 | Reserved | 4 | 2-5 | |
| 3 | Station Name | 26 | 6-31 | |
| 4 | Reserved | 4 | 32-35 | |
| 5 | CATE Interchange status | 1 | 36-36 | Values are blank, or '0', '1', '2', '3' or '9'. |
| 6 | TIPLOC Code | 7 | 37-43 | |
| 7 | CRS Reference Code | 3 | 44-46 | |
| 8 | Reserved | 3 | 47-49 | |
| 9 | CRS Code | 3 | 50-52 | |
| 10 | Ordnance Survey Grid Ref East | 5 | 53-57 | Values are in 0.1 km units. |
| 11 | Blank/Estimate | 1 | 58-58 | Value is blank or 'E' if Grid Reference is an estimate. |
| 12 | Ordnance Survey Grid Ref North | 5 | 59-63 | Values are in 0.1 km units. |
| 13 | Minimum Change Time | 2 | 64-65 | Value in minutes for interchanges, zero otherwise. |
| 14 | Reserved | 1 | 66-66 | |
| 15 | Footnote/Closed/Staff/Not-advertised code | 1 | 67-67 | Values are blank, '0' ... '9', 'C', 'A', 'P', 'S', 'N'. |
| 16 | Reserved | 11 | 68-78 | |
| 17 | Sub-sector code | 3 | 79-81 | Value is blank if non-interchange. |

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

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|---|
| 1 | Record Type | 1 | 1-1 | Constant value 'B'. |
| 2 | Reserved | 4 | 2-5 | |
| 3 | Station Name | 26 | 6-31 | |
| 4 | Reserved | 4 | 32-35 | |
| 5 | GBTT numbers | 45 | 36-80 | Containing 4-character GB Timetable number(s), one or more will be present, left justified. |

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

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|---------------------|
| 1 | Record Type | 1 | 1-1 | Constant value 'C'. |
| 2 | Comment | 79 | 2-80 | |

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

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|---------------------|
| 1 | Record Type | 1 | 1-1 | Constant value 'L'. |
| 2 | Reserved | 4 | 2-5 | |
| 3 | Station Name | 26 | 6-31 | |
| 4 | Reserved | 5 | 32-36 | |
| 5 | Station Alias | 26 | 37-62 | |
| 6 | Reserved | 20 | 63-82 | |

5.10.3.6 The **Group** Definition 'G' record ⁴ contains the following data fields:

| Field | Field description | Length | Position | Notes |
|-------|------------------------|--------|----------|--|
| 1 | Record Type | 1 | 1-1 | Constant value 'G'. |
| 2 | Reserved | 4 | 2-6 | |
| 3 | Station Name | 26 | 7-32 | |
| 4 | Reserved | 5 | 33-37 | |
| 5 | Group Member CRS Codes | 39 | 38-76 | From one to ten codes in the format: 3 char CRS code, 1 blank, next 3 char CRS code etc. |
| 6 | Reserved | 6 | 77-82 | |

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

| Field | Field description | Length | Position | Notes |
|-------|-----------------------------|--------|----------|---|
| 1 | Record Type | 1 | 1-1 | Constant value 'R'. |
| 2 | Reserved | 4 | 2-5 | |
| 3 | Non-BR Location Name | 26 | 6-31 | |
| 4 | Reserved | 3 | 32-34 | |
| 5 | CRS code of Non BR location | 3 | 35-37 | |
| 6 | Mode Character | 1 | 38-38 | 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 'text-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) 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.) |
| 7 | Distance in miles | 2 | 39-40 | |
| 8 | Journey time in minutes | 2 | 41-42 | |
| 9 | Free text field | 39 | 43-81 | Including one '%' character in any byte; text before the '%' is for weekdays, and after is for Sundays. |

⁴ Although the DTD 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.

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

| Field | Field description | Length | Position | Notes |
|-------|-----------------------------|--------|----------|---|
| 1 | Record Type | 1 | 1-1 | Constant value 'V'. |
| 2 | Reserved | 4 | 2-5 | |
| 3 | Routeing Location Name | 26 | 6-31 | i.e. a collective name for the group. |
| 4 | Reserved | 5 | 32-36 | |
| 5 | Routeing Location CRS Codes | 16 | 37-52 | From one to four codes in the format: 3 char CRS code, 1 blank, next 3 char CRS code etc. |
| 6 | Reserved | 29 | 53-81 | |

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

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|--------------------|
| 1 | Record Type | 1 | 1-1 | Constant value 'Z' |
| 2 | Reserved | 4 | 2-5 | |
| 3 | 'ZZZZZZZZZZ' | 10 | 6-15 | |
| 4 | Reserved | 15 | 16-30 | |
| 5 | 'END OF MSNF' | 11 | 31-41 | |
| 6 | Reserved | 40 | 42-81 | |

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

| Field | Field description | Length | Position | Notes |
|-------|--|--------|----------|--------------------|
| 1 | Record Type | 1 | 1-1 | Constant value 'Z' |
| 2 | Reserved | 4 | 2-5 | |
| 3 | 'ZZZZZZZZZZZZZZZZ' | 15 | 6-20 | |
| 4 | Reserved | 10 | 21-30 | |
| 5 | <ul style="list-style-type: none"> • 'LAST WRITTEN BY MSED. CRS AMENDMENTS ONLY' or • 'LAST WRITTEN BY MSED. NON-CRS AMENDMENTS ONLY' or • 'LAST WRITTEN BY CIFU' | 41 | 31-71 | |
| | | 45 | 31-75 | |
| | | 20 | 31-50 | |
| | | 20 | 31-50 | |
| 6 | Reserved | 10 | 72-81 | |
| | | 6 | 76-81 | |
| | | 6 | 76-81 | |
| | | 31 | 51-81 | |

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

When written by CIFU:

| Field | Field description | Length | Position | Notes |
|-------|---|--------|----------|---|
| 1 | Serial number of update | 4 | 1-4 | |
| 2 | Reserved | 1 | 5-5 | |
| 3 | CIFU program identifier | 4 | 6-9 | |
| 4 | Reserved | 1 | 10-10 | |
| 5 | Date of CIFU program run | 6 | 11-16 | |
| 6 | Reserved | 1 | 17-17 | |
| 7 | Time of CIFU program run | 6 | 18-23 | |
| 8 | Reserved | 1 | 24-24 | |
| 9 | Date and time of creation of first CIF update file | 10 | 25-34 | Blank for full generation, else date and time of creation of first CIF update file |
| 10 | Number of CIF update files processed in update | 2 | 35-36 | Blank for full generation, else number of CIF update files processed in update |
| 11 | Reserved | 1 | 37-37 | |
| 12 | Date and time of creation of last of CIF update files processed in update | 10 | 38-47 | Blank for full generation, else date and time of creation of last of CIF update files processed in update |
| 13 | Reserved | 1 | 48-48 | |
| 14 | CIF extract sequence letters | 21 | 49-69 | |
| 15 | Date (ddmmyy) and time (hhmm) of earliest CIF extract processed | 10 | 70-79 | |

When written by MSED:

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|-------|
| 1 | 'MSED' | 4 | 1-4 | |
| 2 | Reserved | 76 | 5-80 | |

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

| Field | Field description | Length | Position | Notes |
|-------|-------------------------------------|--------|----------|-------|
| 1 | 'CIFU' or 'MSED' | 4 | 1-4 | |
| 2 | Reserved | 1 | 5-5 | |
| 3 | CIFU or MSED program version number | 4 | 6-9 | |
| 4 | Reserved | 1 | 10-10 | |
| 5 | Date of CIFU or MSED program run | 8 | 11-18 | |
| 6 | Reserved | 1 | 19-19 | |
| 7 | Time of CIFU or MSED program run | 8 | 20-27 | |

5.10.3.13 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

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

| Field | Field description | Length | Position | Notes |
|-------|-------------------|--------|----------|-------|
| 1 | 'End of File' | 11 | 1-11 | |
| 2 | Reserved | 69 | 12-80 | |

6. Example BTD data

6.1 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  TLYTTL123400
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 0930H000000000
LIWHMPSTM 0933 00000000
LIKNTSHTN 0935H00000000  MOL  2
LIKNSXMCL 0941H0943  09420943A  T
CRFRNDNLT 002T07  124612004  EMU319  100D  B
LIFRNDNLT 0945H0946H  094609463  T
LICTMSLNK 0947H000000002
LIBLFR 0949 0950  094909504  T
LIMTRPLTJ 0953H000000000
LILDNBDE 0955 0956  095509565  5  T
LISPAROAD 0958H000000000
LIBRCKLAJ 1000 00000000  FL  3
LINORWDJ 1010 000000004
LINORWDFJ 1011 00000000  SL
LIWNDMLBJ 1011H00000000  SL
LTECROYDN 1013 10136  TF

```

7. Example TTIS Rejects data

7.1 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 WBX
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

8.1 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

9.1 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

11.1 Various limits are set on the data which can be extracted to CIF and hence forward in to DTD. The limits detailed below apply to the data before it reaches the DTD and are reproduced here for information purposes.

- The maximum number of events on a schedule is 150.
- 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 data fed to CIF. These will result in error messages to the System Controller and, in some cases, the train being rejected by CIF

12. Data Feed Distribution Service

12.1 Timetable Data Feeds are distributed to registered data recipients by the Data Transformation and Distribution service (DTD). The DTD is a service owned by RSP. The service is built and supported by iBlocks.

12.2 The DTD provides the following delivery methods for Registered Data Feed Users to receive their feeds:

- SFTP Pull over the Internet from a publically addressable and accessible iBlocks provided SFTP server with the domain `dtd.atocrsp.org`.
- SFTP Push over the Internet from the DTD's SFTP Client to the Data Recipient's SFTP Server
- FTP Push over the internet from the DTD's FTP Client to the Data Recipients FTP Server

12.3 Feed File

12.3.1 The Timetable feed is provided as a compressed zip file in version 2.0 of the zip file format and is readable using common zip applications such as WINZIP and UNZIP.

12.3.2 The following sizes of Timetable Feed Files can be used as a guide for Data Recipients to plan their connectivity resources:

| File type | Typical size | Maximum size |
|-----------------------|--------------|--------------|
| Daily File | 1 – 2 MB | 60 MB |
| Weekly / Monthly File | 30 – 70 MB | 100 MB |

12.3.3 The Timetable Data Feed file (RJTTcnn.DAT) is a manifest file for the feed and the Data Recipient should ensure that all files in the manifest file are present in the zip. The order of the files in the manifest file and in the zip file has no meaning and it is the Data Recipients responsibility to process the files according to their requirements.

12.4 Scheduling

12.4.1 The DTD receives timetable data from TTIS at around 10.30 pm each evening and processes this data over a one to six hour window depending on the volume of timetable data received. On completion of the transformation process, the DTD pushes the feed to Data Recipients or makes the data available for Data Recipients to pull.

12.5 Distribution Configuration

12.5.1 Data Recipients can manage their FTP Server configuration details using the DTD Web Portal at `dtdportal.atocrsp.org` or by contacting the support email address: `dtd.support@iblocks.co.uk`.

12.5.2 Data Recipients that require a resilient service can set up two SFTP or FTP servers and the DTD will distribute Fares Data to both servers.

12.5.3 The DTD SFTP service is a resilient service. If the infrastructure on which the service fails, the DTD will automatically start up another SFTP server instance on an alternative server at the same domain and IP address.

12.5.4 Data Recipients should contact `dtd.support@iblocks.co.uk` for the IP address of the DTD SFTP Server, FTP Client or SFTP Client if firewall configuration is required.

12.6 Daily Feed Distribution

12.6.1 New Daily Recipients that begin the service will be provided with a full refresh of timetable data.

12.7 Weekly and Monthly Feed Distribution

12.7.1 Data Recipients that choose to receive weekly timetable feeds will receive a full refresh of timetable data on at each Wednesday of each week.

12.7.2 Data Recipients that choose to receive monthly timetable feeds will receive a full refresh of timetable data on the first Wednesday of each period.

End.