



ExpressConnect Tracking V3.1 Technical Guide

Version <1.7>

Revision History

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4 th June 2006	1.1	Suggestions
19 th June 2006	1.2	Added continuation key
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1. Introduction

ExpressConnect Tracking V3 provides an interface to connect to the TNT consignment tracking facility over the Internet and receive tracking details for your consignments.

This document provides a technical guide to this interface. It is designed to help developers understand the interface sufficiently that they can program an application to request tracking data successfully from TNT and process the results.

With the use of the XML (extensible mark-up language) technology, the ExpressConnect V3 tracking interface provides consignment tracking functions for single/multiple consignment submissions for both consignment number and customer reference, additionally it is possible to track shipments based on a TNT account number for a given collection date range but for large tracking volumes we suggest that clients use TNT bulk tracking systems such as Proactive POD, more information about this can be obtained from your local TNT CIT representative(s).

The application also allows you to retrieve up to four sets of extra details for each consignment tracked :

- Origin Address (includes sender and collection address),
- Destination Address (includes receiver and delivery address),
- Shipment details,
- Package details.

Express Connect Login Id's will be arranged by the TNT representative(s). The customer is requested to supply a list of their TNT account numbers that they would like to be registered against their Express Connect logon credentials (Login Id). The extra details will only be permitted if one of the account numbers in the details returned from the tracking application match one of the account numbers registered against the customer id (Login Id).

The track request is passed to TNT in a predetermined XML format which is described in detail in this document, together with examples (see section 3). The track request is sent to TNT by opening a https socket level connection to a given URL and port, thus connecting your own web server with that of TNT. Simple example scripts show how connection can be achieved and results returned are provided as examples in Appendix D: Connecting to TNT.

Data returned from TNT will also be formatted as XML. The structure of this XML is discussed in detail (see section 0) with example XML. When this data is returned, you may parse it either for storage or presentation as required.

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2. Connecting to the TNT server

Each customer is set up with their own company id and password, required for all communications with Express Connect, this is done via your CIT co-ordinator(s).

Before sending an XML document over the internet to TNT, you should verify that you understand the XML format by successfully using the test/demonstration web site provided by TNT.

This can be found at:

<https://express.tnt.com/expresswebservices-website/app/trackingrequest.html>

Alternatively, You can use Postman with your credentials provided by TNT.

The demonstration site links to the **production environment** so that it replicates exactly the results that the customer will achieve with their completed application.

Having made a successful submission of an XML document via the test page, you are ready to set up a socket connection and make a real XML submission using an HTTP POST to the following URL :

<https://express.tnt.com/expressconnect/track.do>

More detailed information on connecting to the ExpressConnect servers can be found in Appendix D: Connecting to TNT.

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Input XML format

The input XML format for ExpressConnect Tracking V3 is relatively simple and consists of the following sections:

- **Header** – always required, this defines the XML document
- **Search Criteria** – The XML tags in this section determine the search criteria for the required tracking request
- **Level of Detail** – These tags describe the amount of details required in the XML response message returned from ExpressConnect.

2.1 Header

The header section will begin every ExpressConnect tracking request XML document submitted to TNT.

This contains the XML declaration, which contains the language encoding used for the document and the standalone attribute which should be set to “no”:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
```

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2.2 Root Element

The root XML element for all track request documents sent to ExpressConnect is :

```
<TrackRequest>
```

The track request XML is completed after the search criteria and level of detail sections by a closing track request tag
</TrackRequest>.

By default the XML schema validation is turned off on the ExpressConnect servers. This means that you will not get a return message that necessarily details exactly what was wrong with the input XML submitted to TNT. We can provide copies of the input and output XML schemas to assist in the development of your solution.

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2.3 Search Criteria

The search criteria XML fragment contains the necessary information to specify the track request to be performed. The data passed depends upon the track request. The table below details the various track types available. Valid search criteria must be provided for every track request.

Track Type	Description
Consignment	Tracks a standard format consignment number e.g. 256867154 or GE256867154NL.
Customer Reference	Tracks a customer reference e.g. DISKS
Account	Tracks all consignments for an account with a specified date range

2.3.1 Search Criteria : Consignment Tracking

For consignment tracking the search criteria section must contain a list of the consignment numbers to be tracked. This is done by including a list of up to a maximum of 10 <ConsignmentNumber> tags containing the required consignment numbers to be tracked. Note if the full consignment number is provided with prefix and suffix, i.e. GE256867154NL, the system will only return consignments with the relevant origin country (in this example NL, this reduces the small chances of receiving tracks with the same consignment number).

e.g. for 1 consignment

```
<SearchCriteria>
  <ConsignmentNumber>256867154</ConsignmentNumber>
</SearchCriteria>
```

e.g. for 3 consignments

```
<SearchCriteria>
  <ConsignmentNumber>256867154</ConsignmentNumber>
  <ConsignmentNumber>256867155</ConsignmentNumber>
  <ConsignmentNumber>256867156</ConsignmentNumber>
</SearchCriteria>
```

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2.3.2 Search Criteria : Customer Reference Tracking

For customer reference tracking the search criteria section must contain a list of the customer references to be tracked. This is done by including a list of up to a maximum of 10 <CustomerReference> tags containing the customer references to be tracked.

e.g. for 1 customer reference

```
<SearchCriteria>  
  <CustomerReference>704101 7172</CustomerReference>  
</SearchCriteria>
```

e.g. for 3 customer references

```
<SearchCriteria>  
  <CustomerReference>704101 7172</CustomerReference>  
  <CustomerReference>BITS</CustomerReference>  
  <CustomerReference>TEST REF</CustomerReference>  
</SearchCriteria>
```

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2.3.3 Search Criteria : Account Tracking

The search criteria for account tracking are slightly more complicated. It is necessary to specify both the account details necessary for the track and the time period for which consignments will be returned. It is only possible to specify one account number/country combination per account track request.

The first XML fragment is <Account> . This contains two XML fields, one to contain the TNT account number and one to contain the country code that the TNT account belongs to.

```
<Account>
  <Number>2104345</Number>
  <CountryCode>GB</CountryCode>
</Account>
```

The next XML fragment is <Period> this is used to define the date range for which consignment information will be searched. The limit is 3 days due to the large amount of data potentially returned from account tracking. The dates provided relate to the collection dates of the consignments for which tracking data is to be returned from TNT.

```
<Period>
  <DateFrom>20071201</DateFrom>
  <DateTo>20071202</DateTo>
</Period>
```

The date format accepted in the date criteria elements is YYMMDD, YY = Year, MM = Month, DD = Day of month.

You can also specify the data range, by defining the first day required and then the number of days worth of data required (<NumberOfDays> must be between 1 and 3):

```
<Period>
  <DateFrom>20071201</DateFrom>
  <NumberOfDays>1</NumberOfDays>
</Period>
```

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If <DateFrom>, <DateTo> and <NumberOfDays> are all passed in the same request, i.e.

```
<Period>
  <DateFrom>20050505</DateFrom>
  <DateTo>20050508</DateTo>
  <NumberOfDays>1</NumberOfDays>
</Period>
```

The XML is accepted by the TNT servers, but the number in <NumberOfDays> will be ignored and the account track will be performed using the dates in <DateFrom> and <DateTo>.

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2.4 Market

By default tracks will be carried out on TNT's central tracking system. However, we do provide access to some of the specific TNT systems that handle certain markets. Currently the two supported are UK domestic and French domestic.

However, in order for ExpressConnect to know which system it needs to interface with to provide results, it needs to know which system to call. This is accomplished by specifying attributes in the search criteria the market for the consignments being tracked:

The attributes are :

`marketType` - This can either be "International" or "Domestic"

`originCountry` - This is the two letter ISO country code, e.g. "GB"

So for example in order to carry out a UK domestic track you would specify the following

```
<SearchCriteria marketType="Domestic" originCountry="GB">  
  <ConsignmentNumber>222222</ConsignmentNumber>  
</SearchCriteria
```

Note it is only possible to specify one market per XML request. This means you can either track UK domestic or standard TNT cons and not both in one message.

It is probable that we will be expanding the markets supported, so it would be beneficial to you if you could populate these attributes. The configuration of this process from the ExpressConnect side, means that if the backend system changes, no changes would be needed for your application.

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2.5 Level of detail

The final XML fragment on the request is the level of detail tag. This allows you to specify the level of detail you want returned from a tracking request. The minimum level is `<Summary/>`, which returns basic information about the consignment. `<Complete/>` returns more information, including status information. `<Complete/>` can also have optional attributes which if used can return information such as Origin Addresses, Destination Addresses, Shipment details and Package details. If the `<LevelOfDetail>` section is omitted then the track will default to summary results.

2.5.1 Summary request

In order to request summary results, the `<LevelOfDetail>` should be specified as follows

```
<LevelOfDetail>
    <Summary/>
</LevelOfDetail>
```

Examples of the output from a Summary track can be found in section 4.3.2.

2.5.2 Complete request

In order to request complete results, the `<LevelOfDetail>` should be specified as follows

```
<LevelOfDetail>
    <Complete/>
</LevelOfDetail>
```

Examples of the output from a Complete track can be found in section 4.3.4.

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The <Complete> element can take up to four optional attributes to specify extra details to be returned. The extra data will only be returned if one of the account numbers registered against the ExpressConnect userid matches with one of the account numbers contained in the data returned from the Track and Trace system. This is to ensure that no potentially commercially sensitive information about a consignment is given to an unauthorised party.

```
<LevelOfDetail>
    <Complete originAddress="true"
    destinationAddress="true" package="true" shipment="true"/>
</LevelOfDetail>
```

All attributes are optional and either have a value of “true” or “false”. Unspecified or incorrectly defined attributes are defaulted to “false”.

ATTRIBUTE	DESCRIPTION
OriginAddress	If set to “true” then sender and collection details are returned
DestinationAddress	If set to “true” then receiver and delivery details are returned
Shipment	If set to “true” then shipment details are returned
Package	If set to “true” then package details are returned

2.6 Locale

It is also possible on the <COMPLETE> tag to specify a locale. The locale is used to attempt to translate the status descriptions into the relevant local language description. If no translated version is found the default English value will be returned.

Forexample

```
<COMPLETE locale="DE">
```

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2.7 Continuation Key

If an account track request produces more results than can be handled in a single call to ExpressConnect, a `<ContinuationKey>` will be returned (see section 4.3.10).

If you wish to receive the extra results available, the same query must be passed to ExpressConnect, with the `<ContinuationKey>` added in to the XML as shown below, otherwise a system error will occur:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<TrackRequest>
  <SearchCriteria>
    <Account>
      <Number>365751</Number>
      <CountryCode>GB</CountryCode>
    </Account>
    <Period>
      <DateFrom>20060522</DateFrom>
      <DateTo>20060523</DateTo>
    </Period>
  </SearchCriteria>
  <LevelOfDetail>
    <Summary/>
  </LevelOfDetail>
  <ContinuationKey>WW662675067      AHE
  20060523134720060523</ContinuationKey>
</TrackRequest>
```

NOTE : This is an example and is not a valid ContinuationKey. This example should not be sent as a test.

If this new query also produces too many results a new continuation key will be generated and returned in the track response XML message (see section 4.3.10). This new key should then be sent with the track request to ExpressConnect if these further results are required. This process is repeated until no continuation key is returned, meaning that the end of the results for that query has been reached. The continuation key is only returned for calls to account tracking.

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2.8 Pod Image url

With the release of version 3.1 of the express connect tracking software, additional functionality has been introduced to allow those customers who have registered to use express connect tracking, to retrieve a link to a proof of delivery (POD) image for any consignment that they have sent which is still active within TNT's track and trace system. This is restricted to consignments which have a POD image available.

In order to return the POD image link, some modifications to the input xml are necessary.

When a request for a POD image link is made, the system will verify that the customer has a valid interest in the consignment. If the system cannot determine this interest, then no POD image link will be returned.

The following example xml documents these additions...

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<TrackRequest locale="en_US" version="3.1">
  <SearchCriteria marketType="INTERNATIONAL" originCountry="US">
    <ConsignmentNumber>123456782</ConsignmentNumber>
    <Account>
      <Number>21045</Number>
      <CountryCode>GB</CountryCode>
    </Account>
  </SearchCriteria>
  <LevelOfDetail>
    <Complete originAddress="true"
      destinationAddress="true"
      package="true"
      shipment="true"/>
    <POD format="URL"/>
  </LevelOfDetail>
</TrackRequest>
```

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2.8.1 *Optional version attribute*

A new attribute “version” has been added to the <TrackRequest> element. This attribute is optional for the purposes of consignment tracking, however in order to retrieve the POD image link, it must be present and the value must be set to 3.1. Any other value will be ignored and no POD image link will be returned.

2.8.2 *Mandatory marketType & originCountry attributes*

The marketType and originCountry attributes of the <SearchCriteria> element, whilst optional for the purposes of simply tracking a consignment, become mandatory as soon as the version attribute described above is set to 3.1. Failure to set the marketType and originCountry for a version 3.1 track will result in a validation error.

Valid values for the marketType attribute are. INTERNATIONAL or DOMESTIC.

OriginCountry is the located country of the sender as a standard two character code, e.g. GB, FR or US

2.8.3 *Optional POD element*

The final change to the version 3.1 input xml is to add the optional <POD> element as a child of the <LevelOfDetail> element.

The <POD> element contains the mandatory attribute format.; Currently, the only valid value for format is “URL”. Any other value will be ignored.

<POD format = “URL” />

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3. Output XML format

As with the input XML, the output XML contains different sections.

- **Header** - always produced, defines XML document and encoding
- **Root element** – XML node that contains all the output from TNT
- **Consignment Sections** – one consignment node is produced for each consignment found by the requested query

Each XML node that could potentially contain data rather than simply being a placeholder for further XML nodes, is marked as an optional field in the schema definition. This means that most XML nodes are only returned if data is available to populate them. Therefore, if when results are retrieved for a given request some data is missing from the output, it is going to be because that data is not available in the backend tracking database.

Also note that CDATA tags are used throughout the results in order to protect the XML from characters such as & within the data returned from the tracking systems.

3.1 Header

The header section will begin every ExpressConnect tracking response XML document sent back by TNT. This contains the XML declaration, which defines the encoding of the document:

```
<?xml version="1.0" encoding="UTF-8" ?>
```

3.2 Root Element

The returned XML document from TNT has a Root name of <TrackResponse>. The track response XML is closed after the last consignment section using </TrackResponse> .

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3.3 Consignment Sections

The consignment XML sections can potentially contain a significant amount of information, which if broken down can be understood more easily. Some of the XML returned will be dependent upon the exact search criteria specified in the XML document submitted to ExpressConnect.

3.3.1 *The access attribute*

Each returned Consignment node has an access attribute, which will be either “public” or “full”.

i.e.

```
<Consignment access="public">
```

Public access, indicates that the tracking information returned is available to anyone who tracks the consignment. The tracking data returned contains only a summary of the current status of the consignment. It does NOT contain any commercially sensitive data, neither does it contain any information that could identify any participants in the to the consignment. For example the sender and receiver addresses/

```
<Consignment access="full">
```

Full access indicates that the tracking information returned, contains complete information about the status of the consignment in addition to the summary data provided under “full” access. Details of the sender and receiver addresses along with package and shipment information are returned. This additional information is only returned to those customers whose account number is associated to the consignment.

If no extra details are requested then the attribute will be set to “public”. If extra details are requested and the user is allowed to see them (see section 4.3.8) then the attribute will be set to “full” otherwise it will be set to “public”.

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3.3.2 Summary results

Below is the returned consignment node XML for a successful track with <LevelOfDetail> specified as <Summary/>.

```

<Consignment access="public">
  <ConsignmentNumber>352236021</ConsignmentNumber>
  <CustomerReference><![CDATA[TEST REF]]></CustomerReference>
  <CollectionDate format="YYYYMMDD" >20071011</CollectionDate>
  <DeliveryTown><![CDATA[LISBOA]]></DeliveryTown>
  <SummaryCode>INT</SummaryCode>
  <PieceQuantity>1</PieceQuantity>
</Consignment>

```

The <ConsignmentNumber> will contain the number of the consignments found by the search, or as specified in the search criteria in the case of a consignment search.

<CustomerReference> will contain the customer reference for the consignment if the consignment found has any customer reference within the consignment details, or the reference(s) specified in the search criteria.

The <CollectionDate> tag contains the collection date of the consignment and the attribute defines the date format, which is set to YYYYMMDD.

The <DeliveryTown> contains the delivery town, final destination town for the consignment.

Summary Codes are discussed in section 4.3.3.

<PieceQuantity> refers to the number of pieces contained in the consignment.

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3.3.3 Delivery summary codes

The <SummaryCode> is based on the last status recorded in the track and trace system, which will always fall into one of the categories shown in the table below.

CODE	DESCRIPTION	INFORMATION
EXC	Exception	There is an issue affecting the consignment. More details in the status descriptions or from calling your local TNT customer services centre.
INT	In Transit	The consignment is being processed by TNT
DEL	Delivered	The consignment has been delivered
CNF	Consignment Not Found	The search request resulted in no results

If you request tracking details for a consignment number which doesn't exist, a consignment node will be returned with the non-existent consignment number in the <ConsignmentNumber> element and CNF in the Summary element.

e.g

```
<?xml version="1.0" encoding="UTF-8"?>
<TrackResponse>
  <Consignment access="public" >
    <ConsignmentNumber>352236021</ConsignmentNumber>
    <SummaryCode>CNF</SummaryCode>
  </Consignment>
</TrackResponse>
```

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3.3.4 Complete Results

If <Complete/> has been specified in the search criteria, then the same basic information returned in a <Summary/> track is provided, together with <StatusData> XML nodes, one for each status that has been recorded against the consignment during its lifetime.

The extra information returned for a complete track is shown in bold in the following example :

```
<Consignment access="public">
  <ConsignmentNumber>352236021</ConsignmentNumber>
  <OriginDepot>NTS</OriginDepot>
  <OriginDepotName><![CDATA[Stansted]]></OriginDepotName>
  <CustomerReference><![CDATA[TEST REF]]></CustomerReference>
  <CollectionDate format="YYYYMMDD" >20071011</CollectionDate>
  <DeliveryTown><![CDATA[LISBOA]]></DeliveryTown>
  <Signatory><![CDATA[test]]></Signatory>
  <SummaryCode>INT</SummaryCode>
  <DestinationCountry>
    <CountryCode>PT</CountryCode>
    <CountryName><![CDATA[Portugal]]></CountryName>
  </DestinationCountry>
  <OriginCountry>
    <CountryCode>GB</CountryCode>
    <CountryName><![CDATA[United Kingdom]]></CountryName>
  </OriginCountry>
</PieceQuantity>1</PieceQuantity>
```

<OriginDepot> is the three letter code for the TNT depot that was responsible for collection of the consignment and where the initial status codes would have been recorded. <OriginDepotName> is the English version of the Depot name.

The <DestinationCountry> and <OriginCountry> tags both contain a <CountryCode> tag which will have the two letter ISO county code, and <CountryName> which will contain the text version of the country (UK English) name.

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3.3.5 *Delivered consignments*

If a consignment has been delivered then extra information is supplied relating to delivery dates and signatory. These are returned for both <Complete/> and <Summary/> results

4.3.5.1 Summary

```
<Consignment access="public">
  <ConsignmentNumber>352236021</ConsignmentNumber>
  <CustomerReference><![CDATA[TEST REF]]></CustomerReference>
  <CollectionDate format="YYYYMMDD" >20071011</CollectionDate>
  <DeliveryTown><![CDATA[LISBOA]]></DeliveryTown>
  <DeliveryDate format="YYYYMMDD" >20071016</DeliveryDate>
  <DeliveryTime format="HHMM" >0840</DeliveryTime>
  <Signatory><![CDATA[test]]></Signatory>
  <SummaryCode>DEL</SummaryCode>
  <PieceQuantity>1</PieceQuantity>
</Consignment>
```

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4.3.5.2 Complete

```

<Consignment access="public">
  <ConsignmentNumber>352236021</ConsignmentNumber>
  <OriginDepot>NTS</OriginDepot>
  <OriginDepotName><![CDATA[Stansted]]></OriginDepotName>
  <CustomerReference><![CDATA[TEST REF]]></CustomerReference>
  <CollectionDate format="YYYYMMDD" >20071011</CollectionDate>
  <DeliveryTown><![CDATA[LISBOA]]></DeliveryTown>
  <DeliveryDate format="YYYYMMDD" >20071016</DeliveryDate>
  <DeliveryTime format="HHMM" >0840</DeliveryTime>
  <Signatory><![CDATA[test]]></Signatory>
  <SummaryCode>DEL</SummaryCode>
  <DestinationCountry>
    <CountryCode>PT</CountryCode>
    <CountryName><![CDATA[Portugal]]></CountryName>
  </DestinationCountry>
  <OriginCountry>
    <CountryCode>GB</CountryCode>
    <CountryName><![CDATA[United Kingdom]]></CountryName>
  </OriginCountry>
<PieceQuantity>1</PieceQuantity>

```

<DeliveryDate> is handled in the same way as <CollectionDate> with the data in the tag and the format attribute specifying the format, which will be YYYYMMDD.

Also supplied is the <DeliveryTime>. As with the date tags this contains the data in the tag and the format attribute specifies the time format, which will be HHMM.

The <Signatory> tag will contain the name of the person who signed for the consignment to confirm delivery.

As these examples are <Complete> tracks, this XML block is followed by the <StatusData> XML blocks. These are discussed in section 4.3.7.

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3.3.6 Access Attribute

As discussed earlier when a track is carried out the data returned from the backend tracking systems contains account numbers that are compared with the account numbers registered against your ExpressConnect user/login id.

If any of these account numbers match then the `access` attribute will be set to `full` on the `<Consignment>` XML node.

If this is the case then extra information is added to the results depending on the `<LevelOfDetail>` selected.

4.3.6.1 Summary Results

For Summary results the consignment would be for example:

```
<Consignment access="public">
  <ConsignmentNumber>352236021</ConsignmentNumber>
  <CustomerReference><![CDATA[TEST REF]]></CustomerReference>
  <CollectionDate format="YYYYMMDD" >20071011</CollectionDate>
  <DeliveryTown><![CDATA[LISBOA]]></DeliveryTown>
  <DeliveryDate format="YYYYMMDD" >20071016</DeliveryDate>
  <DeliveryTime format="HHMM" >0840</DeliveryTime>
  <Signatory><![CDATA[test]]></Signatory>
  <SummaryCode>DEL</SummaryCode>
  <TermsOfPaymentAccount>
    <Number>18356</Number>
    <CountryCode>GB</CountryCode>
  </TermsOfPaymentAccount>
  <PieceQuantity>1</PieceQuantity>
</Consignment>
```

The extra fields are highlighted in bold, which is the `<TermsOfPaymentAccount>` node and its children.

`<Number>` is the TNT account number of the customer paying for the consignment.

`<CountryCode>` is the two letter ISO code for the country to which the account belongs.

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4.3.6.2 Complete

For Completer results :

There will be an extra XML node as follows:

```
<SenderAccount>  
  <Number><![CDATA[18356]]></Number>  
  <CountryCode>NL</CountryCode>  
</SenderAccount>
```

This is the same as for the terms of payment account tag described above, but the information relates to the account details for the sender of the consignment. This could of course be the same as the terms of payment account.

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3.3.7 StatusData XML nodes

As described earlier the <StatusData> XML nodes contain information related to each status that has been recorded against the consignment during its lifetime as it is processed by TNT on its journey.

<StatusData> XML always has the following format, e.g.

```
<StatusData>
  <StatusCode>OK</StatusCode>
  <StatusDescription><![CDATA[Delivered]]></StatusDescription>
  <LocalEventDate format="YYYYMMDD">20071016</LocalEventDate>
  <LocalEventTime format="HHMM">0840</LocalEventTime>
  <Depot>LIS</Depot>
  <DepotName><![CDATA[ Lisbon]]></DepotName>
</StatusData>
```

<StatusCode> contains the two letter TNT status code.

<StatusDescription> contains the text version of the status description in a CDATA for protection. If no locale tag is specified as an attribute within the <Complete> tag (see section 3.6) then the locale defaults to "en_GB", this default results in all TNT shipment status descriptions being returned in the XML in UK English. A complete list of all TNT shipment status events and their respective codes can be supplied to customers via their TNT CIT representative.

The <LocalEventDate> and <LocalEventTime> XML tags are again handled in the same manner as <CollectionDate> and <DeliveryDate> with the data contained in the tag body and the format attribute specifying the relevant date or time format.

After the <StatusData> tags the track response document is closed with the closing </TrackResponse> tag.

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3.3.8 Extra Details

As described earlier it is possible to request the following extra details :

ATTRIBUTE	DESCRIPTION
originAddress	If set to "true" then sender and collection details are returned
destinationAddress	If set to "true" then receiver and delivery details are returned
shipment	If set to "true" then shipment details are returned
package	If set to "true" then package details are returned

These will only be returned when consignment access attribute has been set to full, which means that an account registered against the userid (ExpressConnect Login Id) being used to submit the track request matches one of the account numbers contained in the track and trace data related to that consignment.

If extra details are requested and they are not allowed then the access attribute is simply set to public and no extra detail is returned.

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4.3.8.1 Addresses

The <Addresses> XML node set will be returned if either origin or destination address has been requested for extra details and the consignment access attribute has been set to full.

The <Addresses> node set could contain up to 4 <Address> sections, one each for Sender, Collection, Receiver or Delivery address. Sender and collection (if consignment has a deviating collection address) will be returned if the originAddress attribute is set to true in the request. Receiver and delivery (if consignment has a deviating delivery address) will be returned if the destinationAddress attribute is set to true in the request.

Each individual <Address> node is defined by an attribute of addressParty attribute which defines whether the address given in that XML node set is Sender, Collection, Receiver or Delivery.

The data within the Address nodes is self explanatory and follows the same pattern as the rest of the XML defined earlier. With data in the tags being in CDATA sections for most of the data returned.

```
<Addresses>
  <Address addressParty="Sender" >
    <Name><![CDATA[TEST CON]]></Name>
    <AddressLine><![CDATA[TEST 23]]></AddressLine>
    <AddressLine></AddressLine>
    <AddressLine></AddressLine>
    <City><![CDATA[AMSTERDAM]]></City>
    <Province><![CDATA[NOORD-HOLLAND]]></Province>
    <Postcode><![CDATA[1100 AA]]></Postcode>
    <Country>
      <CountryCode>NL</CountryCode>
      <CountryName><![CDATA[Netherlands]]></CountryName>
    </Country>
    <PhoneNumber><![CDATA[020 511111]]></PhoneNumber>
    <ContactName><![CDATA[OTTE]]></ContactName>
    <ContactPhoneNumber><![CDATA[020 111111]]></ContactPhoneNumber>
    <AccountNumber><![CDATA[000180454]]></AccountNumber>
    <VATNumber><![CDATA[FB834343432432]]></VATNumber>
  </Address>
  <Address addressParty="Collection" >
    <Name><![CDATA[TEST CON]]></Name>
    <AddressLine><![CDATA[TEST 23]]></AddressLine>
    <AddressLine></AddressLine>
    <AddressLine></AddressLine>
  </Address>
```

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```

<City><![CDATA[AMSTERDAM]]></City>
<Province><![CDATA[NOORD-HOLLAND]]></Province>
<Postcode><![CDATA[1100 AA]]></Postcode>
<Country>
  <CountryCode>NL</CountryCode>
  <CountryName><![CDATA[Netherlands]]></CountryName>
</Country>
<ContactName><![CDATA[CHRIS]]></ContactName>
<ContactPhoneNumber><![CDATA[0 0]]></ContactPhoneNumber>
</Address>
</Addresses>

```

4.3.8.2 Package

This section is returned if the package attribute is set to true for complete result information in the request search criteria and the consignment access in the response document has been set to true.

```

<PackageSummary>
  <NumberOfPieces>1</NumberOfPieces>
  <Weight units="kgs" >6.700</Weight>
  <PackageDescription><![CDATA[CARTON]]></PackageDescription>
  <GoodsDescription><![CDATA[TURBO CHARGER]]></GoodsDescription>
  <InvoiceAmount currency="EUR" >200.50</InvoiceAmount> </PackageSummary>

```

The <Weight> tag contains the weight of the consignment, with the units defined in the units attribute on the tag which will always be kgs (metric Kilo grams, with decimal precision of 3) in the present version.

<InvoiceAmount> contains the invoice value of the consignment with the currency code defined in a currency attribute. We use the ISO currency codes, a list can be provided on request. All monetary values have a decimal precision of 2

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4.3.8.3 Shipment Summary

This node set is returned if the shipment attribute is set to true for complete result information and the consignment access in the response document has been set to true.

```
<ShipmentSummary>
  <TermsOfPayment>Sender</TermsOfPayment>
  <DueDate format="YYYYMMDD" >20060508</DueDate>
  <Service><![CDATA[12:00 Express]]></Service>
</ShipmentSummary>
```

The terms of payment describes if the consignment was sender or receiver pays and will only contain either “Sender” or “Receiver”.

The <DueDate> tag follows the same pattern as other dates, with the value in the tag content and the format described in the format attribute. <DueDate> is the expected delivery date for the consignment. This is useful if a consignment is still in transit.

The <Service> tag contains the description of the TNT service used to ship the consignment. A complete list containing all available TNT service codes and their descriptions are available from the customers TNT CIT representative.

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3.3.9 *POD image link*

This node set is returned if the version attribute is set to 3.1, the <POD format="URL" /> is specified in the request xml and the customer is authorised to see the POD image.

What is returned is only a hyperlink to the pod image and not the POD image itself.

```
<POD>
<![CDATA [
https://images.tnt.com/archive?get&contRep=P1&docId=pusqjgdnfjcesp4ziyrrt2aklio
a5&pVersion=0045&accessMode=r&authId=ExpressConnect&expiration=20210527174219
&secKey=MIIB0QYJKoZIhvcNAQcCoIIBWjCCAb4CAQExDjAMBggqhkiG9w0CBQUAMASGCSqGSIb3D
QEHA TGCAZowggGWA gEBMIGVMIGNMRMwEQYDVQQGEwpBdGhlcN0b25lMRMwEQYDVQQHEwpBdGhlcN
N0b25lMRcwFQYDVQQKEw5UTlQgQ2xpZW50IERldjEOMAwGA1UECxFbX1UTlQxXjAUBGNVBAMTDV
B
PRCBJbWFNzSBLZ XkxIDAeBgkqhkiG9w0BCQEWE XJha i5qdWxoYUB0bnQuY29tAgMJ+W8wDAYIKoZ
I
hvcNAgUFAKBZMBgGCSqGSIb3DQEJAzELBgkqhkiG9w0BBwEwHAYJKoZIhvcNAQkFMQ8XDTA5MDUy
N
zE0NDIxOVowHwYJKoZIhvcNAQkEMRIEEJZAg8K0v3tK7T9yFHDj0aQwDQYJKoZIhvcNAQEBBQAEg
Y
AINUnB1h2uMBA6rOzv6+v+Xois+zNgrlmMkMRIgWv1ILNlwNCXR3FTkzv/S1lXrW18wRPY/GXvSd
4
vX7+pUAYO/Kf001WoPyKxD3Qudp8dG3LjG6+FOMIHp3qGzuAOgnCMD8VwNlQgPrdi/2Ihh8sH6ER
v
Yx1R/QNY8MD+eU3vDw==
]]>
</POD>
```

The returned <POD> tag contains a url link to TNT's document services server. The link, when called will return an image of the proof of delivery for the consignment being tracked, in PDF format. The URL returned will expire after two hours. If it is necessary to view the POD image again more than two hours after it has been originally tracked, then the client system will need to track the consignment again to generate a new POD image URL.

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4.3.9.1 Account tracking results

Account tracks produce the same results as for consignment or reference tracking described above, but you will also have the access attribute set to full for any found consignments.

As with consignment tracking then if no cons are found the `<SummaryCode>` will be set to CNF. (Consignment not found).

3.3.10 Continuation Key

If when doing an account track there are too many consignments found in tracking that match the search criteria to be sent back in one XML message from ExpressConnect a new XML tag `<ContinuationKey>` is returned after the last `<Consignment/>` tag and before the final `</TrackResponse>` tag.

This contains a key that can be sent back in a new query in order to obtain the remaining results (see 3.7).

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4. Errors

There are a number of different errors that may occur when using TNT ExpressConnect tracking V3. Many of these you will encounter during the development phase when unsure of the XML format and trying to send XML through a socket connection for the first time.

It would be sensible to ensure that your code is capable of handling all of the potential error messages returned by ExpressConnect.

4.1 Application generated errors

Application errors are included in your returned XML as they occur and take the following format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<TrackRequest>
  <Error>
    <Code>0007</Code>
    <Message><![CDATA[ Invalid Date Range  ]]></Message>
  </Error> </TrackRequest>
```

For possible errors see Table of application generated error codes, messages and resolutions on the next page

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4.2 Table of application generated error codes, messages and resolutions

Error Code	Error Description	Resolution
0001	A system error has occurred	Contact your local TNT representative with details of the XML sent to tracking and the user details
1001	Invalid request XML	Check XML format carefully and resubmit message. If error continues contact your local TNT representative with details of the XML sent to tracking and the user details
6001	Exceeded the maximum number of consignment numbers, that may be submitted, which is fifty.	Enter less than 50 consignment numbers
6001	Exceeded the maximum number of customer references, that may be submitted, which is fifty.	Enter less than 50 customer references
7001	Null account number supplied	Supply a valid account number
7002	Null account country code supplied	Supply a valid account country code
7003	No valid search criteria specified	Supply valid search criteria
7004	Invalid account specified for search	Supply a valid account number for the useid
8001	No from date specified	Specify a valid from date
8002	Invalid from date format specified	Check the format of the from date supplied
8003	Either a to date or a number of days to search must be specified	Correct input XML accordingly for search period
8004	from date after to date	Check the dates supplied for search period
8005	Maximum permitted search period is four days including the from date	Alter the date range requested
8006	Invalid to date format specified	Check the dates supplied
8007	Error parsing date	Check the dates supplied
9001	Both the market type and origin country attributes must be set	Only applicable when version attribute is set to 3.1. The marketType & originCountry attributes must contain valid values.

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5. Appendix A : XML elements definition (input)

These tables contain all of the possible Input XML nodes and some information about their use.

XML ELEMENT	DESCRIPTION	COMMENTS
TrackRequest	Top levelement	
SearchCriteria	Search Criteria Node	Has optional marketType and OriginCountry tags for determining which TNT system to use for tracking (see 3.4. These should be populated if at all possible.
Account	Holds elements required for tracking by account	Required if tracking by account. Must not be present otherwise. Can also be used for account filtering on ConsignmentNumber or CustomerReference tracking
Number	Account number	Required if tracking by account. Can also be used for account filtering on ConsignmentNumber or CustomerReference tracking
CountryCode	Account Country Code	Required if tracking by account. Can also be used for account filtering on ConsignmentNumber or CustomerReference tracking
Period	Specifies the period for which the	Required if tracking by account
DateFrom	Specifies the earliest date to track from in format YYYYMMDD	Required if tracking by account

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XML ELEMENT	DESCRIPTION	CONSTRAINTS
DateTo	Specifies the latest date to track to in format YYYYMMDD	Either this or NumberOfDays required if tracking by account
NumberOfDays	Specifies the number of days to track from the DateFrom date or to track to the DateTo date. If both DateFrom and DateTo are supplied then this field is ignored	Either this or DateTo required if tracking by account
ConsignmentNumber	Holds the consignment number to search on	Required for tracking by consignment number. Must not be present otherwise. One per element up to a maximum of 50 elements
CustomerReference	Holds the customer reference to search on	Required for tracking by customer reference. Must not be present otherwise. One per element up to a maximum of 50 elements
LevelOfDetail	Specifies level of detail required in returned XML	If omitted then Summary is assumed
Summary	Specifies that only summary data should be returned	Either Summary or Complete must be specified
Complete	Specifies that complete tracking data should be returned. Extra details can also be returned by specifying various attributes (see 3.5.2)	Either Summary or Complete must be specified

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POD	Secies the format in which the POD is returned. Format specified by "format" attribute. Only supported value is "URL".	Empty element.
-----	--	----------------

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6. Appendix B : XML elements definition (output)

The tables on the next few pages contain details of the possible XML nodes returned from ExpressConnect.

XML ELEMENT	DESCRIPTION	CONSTRAINTS	MAX LENGTH
TrackResponse	Top level element		
Consignment (may be multiple)	Holds elements containing consignment data	The access attribute will be either "public" or "full"	-
ConsignmentNumber	Consignment number		15
AlternativeConsignmentNumber	Alternative consignment number.		15
OriginDepot	The Origin Depot code		3
OriginDepotName	The English name of the TNT depot		
CustomerReference	Customers reference		24
CollectionDate	Collection date of consignment	format="YYYYMMDD" attribute returned to describe data format	11
DeliveryTown	Delivery town of consignment		40
DeliveryDate	Date consignment delivered	format="YYYYMMDD" attribute returned to describe data format	11
DeliveryTime	Time consignment delivered	format="HHMM"	5
Signatory	Who signed for consignment on delivery		20
SummaryCode	Description of current delivery status		3
DestinationCountry	Destination country of consignment		-
CountryCode	Destination country code		3
CountryName	Destination country name		30
OriginCountry	Originating country of consignment		
CountryCode	Originating country code		3

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XML ELEMENT	DESCRIPTION	CONSTRAINTS	MAX LENGTH
CountryName	Originating country name		30
TermsOfPaymentAccount	Payee account details		
Number	Account Number of payer		9
CountryCode	Country of payer's account		3
SenderAccount	Sender account details		
Number	Account Number of sender		9
CountryCode	Country of sender		3
PieceQuantity	Piece quantity		5
StatusData	Holds elements containing status data		
StatusCode	Status code		5
StatusDescription	Status description in English		40
LocalEventDate	Date when the status was updated		11
LocalEventTime	Time when status was updated		6
Depot	Depot where the consignment status was updated		40
Addresses	Returned if either the originAddress or destinationAddress attributes are set to "true"		
Address	The AddressParty attribute shows which type of address is stored in this node. The possible values are :- Sender Receiver Collection Delivery		

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XML ELEMENT	DESCRIPTION	CONSTRAINTS	MAX LENGTH
Name	Name of customer, either: - sending consignment - receiving consignment - where consignment is to be collected - where consignment is to be delivered		50
AddressLine	First address line of customer either: - sending consignment - receiving consignment - where consignment is to be collected - where consignment is to be delivered		30
AddressLine	Second address line of customer either: - sending consignment - receiving consignment - where consignment is to be collected - where consignment is to be delivered		30
AddressLine	Third address line of customer either: - sending consignment - receiving consignment - where consignment is to be collected - where consignment is to be delivered		30
City	City location of customer: - sending consignment - receiving consignment - where consignment is to be collected - where consignment is to be delivered		30
Province	Province of consignment		30
Postcode	Post code of consignment		9

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XML ELEMENT	DESCRIPTION	CONSTRAINTS	MAX LENGTH
Country	Country of consignment		30
PhoneNumber	Telephone number of consignment contact		17
ContactName	Contact name for consignment		22
ContactPhoneNumber	Telephone number of contact person		17
AccountNumber	Account number		9
VATNumber	Consignment VAT number		20
PackageSummary			
NumberOfPieces	The number of pieces in the consignment		
Weight	Weight of the consignment	units="kgs" attribute	
PackageDescription	Package description		
GoodsDescription	The goods description for the consignment		
InvoiceAmount	The invoice amount	currency="EUR" attribute uses ISO currency code	
ShipmentSummary			
TermsOfPayment	Will be "Sender" or "Receiver"		
DueDate	Contains expected delivery date for the consignment	format="YYYYMMDD" attribute to describe data	
Service	Contains TNT service code for the consignment		
Error			
Code	Error code		
Message	Error message		
POD	Contains the complete URL to display the POD image		

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7. Appendix C : XML Node Directory

This section provides all of the XML nodes and attributes for easy reference and cut and paste into code.

7.1 Input

Open	Close	Attributes
<TrackRequest>	</TrackRequest>	
<SearchCriteria>	</SearchCriteria>	marketType, originCountry
<Account>	</Account>	
<Number>	</Number>	
<CountryCode>	</CountryCode>	
<Period>	</Period>	
<DateFrom>	</DateFrom>	
<DateTo>	</DateTo>	
<NumberOfDays>	</NumberOfDays>	
<ConsignmentNumber>	</ConsignmentNumber>	
<CustomerReference>	</CustomerReference>	
<LevelOfDetail>	</LevelOfDetail>	

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Open	Close	Attributes
<Summary>	</Summary>	
<Complete>	</Complete>	locale originAddress destinationAddress package shipment

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7.2 Output

Open	Close	Attributes
<TrackResponse>	</TrackResponse>	
<Consignment>	</Consignment>	access="public" access="full"
<ConsignmentNumber>	</ConsignmentNumber>	
<AlternativeConsignmentNumber>	</AlternativeConsignmentNumber>	
<OriginDepot>	</OriginDepot>	
<OriginDepotName>	</OriginDepotName>	
<CustomerReference>	</CustomerReference>	
<CollectionDate>	</CollectionDate>	format="YYYYMMDD"
<DeliveryTown>	</DeliveryTown>	
<DeliveryDate>	</DeliveryDate>	format="YYYYMMDD"
<DeliveryTime>	</DeliveryTime>	format="HHMM"
<Signatory>	</Signatory>	
<SummaryCode>	</SummaryCode>	
<DestinationCountry>	</DestinationCountry>	
<CountryCode>	</CountryCode>	
<CountryName>	</CountryName>	
<OriginCountry>	</OriginCountry>	

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Open	Close	Attributes
<CountryName>	</CountryName>	
<TermsOfPaymentAccount>	</TermsOfPaymentAccount>	
<Number >	</Number >	
<CountryCode>	</CountryCode>	
<SenderAccount>	</SenderAccount>	
<Number>	</Number>	
<CountryCode>	</CountryCode>	
<PieceQuantity>	</PieceQuantity>	
<StatusData>	</StatusData>	
<StatusCode>	</StatusCode>	
<StatusDescription>	</StatusDescription>	
<LocalEventDate>	</LocalEventDate>	format="YYYYMMDD"
<LocalEventTime>	</LocalEventTime>	format="HHMM"
<Depot>	</Depot>	
<Addresses>	</Addresses>	

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Open	Close	Attributes
<Address>	</Address>	addressParty="Sender" addressParty="Collection" addressParty="Receiver" addressParty="Delivery"
<Name>	</Name>	
<City>	</City>	
<Province>	</Province>	
<Postcode>	</Postcode>	
<Country>	</Country>	
<PhoneNumber>	</PhoneNumber>	
<ContactName>	</ContactName>	
<ContactPhoneNumber>	</ContactPhoneNumber>	
<AccountNumber>	</AccountNumber>	
<VATNumber>	</VATNumber>	

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Open	Close	Attributes
<PackageSummary>	</PackageSummary>	
<NumberOfPieces>	</NumberOfPieces>	
<Weight>	</Weight>	units="kgs"
<PackageDescription>	</PackageDescription>	
<GoodsDescription>	</GoodsDescription>	
<InvoiceAmount>	</InvoiceAmount>	e.g. currency="GBP"
<ShipmentSummary>	</ShipmentSummary>	
<TermsOfPayment>	</TermsOfPayment>	
<DueDate>	</DueDate>	format="YYYYMMDD"
<Service>	</Service>	
<Error>	</Error>	
<Code>	</Code>	
<Message>	</Message>	

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8. Appendix D : Connecting to TNT

In order to connect to ExpressConnect tracking V3 a few important technical points need to be remembered

- Information is sent/exchanged securely via an https connection.
- The server uses the basic authentication scheme to pass user details. This requires that the username and password are sent as a base64 encoded string in the http header.

In VBScript this is done as:

```
httpObj.setRequestHeader "Authorization", "Basic "+ Base64Encode ("TNTTEST:testuser")
```

- Some characters need to be encoded in order to ensure they are processed correctly :

&	becomes	&
'	becomes	'
"	becomes	"
<	becomes	<
>	becomes	>

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- Your XML data must be passed as a URL encoded string.

There are many code snippets available on the Internet that perform this translation.

(For information on URL encoding – visit <http://www.bloobery.com/indexdot/html/topics/urlencoding.htm>)

- The XML for the tracking message is sent as the value of a parameter named xml_in, note this must be in lower case.

In VBScript this is done as (xml_message is a variable that contains the xml_:

```
httpObj.Send  
"xml_in"&xml_message
```

This section provides some example connection code snippets. It should be possible for a developer to read these examples and be able to convert the principals into their own code. Please note these examples only demonstrate the ability to access ExpressConnect via a simple method and are not intended to be used for customers production software and are used at your own risk.

TNT Express ICS is unable to provide specific support with regards to customers code, but will assist where possible to ensure that a customer can connect successfully to TNT via ExpressConnect.

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8.1 VBScript

```
        set objfilesys = wscript.createObject("scripting.filesystemobject")
set objText = objfilesys.opentextfile("c:\trackV3.txt", 1)
xml_message = objText.ReadAll          objText.close          set objText =
nothing

        set objfilesys = nothing          'note ----- create a socket connection
object          dim httpOb

        set httpOb = WScript.CreateObject("Microsoft.XMLHTTP")

        'note ----- open socket connection to given IP address and entry file    httpOb.Open
"POST", "https://express.tnt.com/expressconnect/track.do?version=3", false, "", ""
```

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```
'note -----display error message if socket opening fails
if Err then
    Wscript.Echo "Error connecting: "&Err.Number&" "& Err.Description           else
'note ----- if opening socket works send XML

    httpOb.setRequestHeader "Content-Type","application/x-www-form-urlencoded"
'code for sending userid

    'Base64Encode is a subroutine not included here that does the necessary
encoding - many of these are available on the Internet to download.
httpOb.setRequestHeader "Authorization","Basic "+
Base64Encode("YOURUSERNAME:yourpassword")
    httpOb.Send "xml_in="& xml_message           'note ----- store
returned XML result and display           xml_out = httpOb.responseText
Wscript.Echo xml_out
```

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```
end if          'note ----- release socket object          set httpObj = no
```

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