



# ***Interfaces***

## **Specification for Contractor and Financial interface Manager**

Version 2-1-3d v4.5

**25<sup>th</sup> August 2011**

**Interface specification version 2-1-3d v4.5**

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**Abstract:** This document identifies the format for the Contractor and Financial interface manager input and output formats.

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<b>Modifications:</b>	<u>Ver</u>	<u>Author</u>	<u>Date</u>	<u>Description</u>
		RP	01/06/98	Following NMA Meeting
		RP	15/10/98	Following technical input from T.Carr
		RP	01/12/98	Additions to Commitment File Re W.B.C.
		RP	29/09/99	Discussions with Siteman
	2.1.3	CT	19/03/03	Changes added for % and rogue items
	2.1.3a	RP	25/03/03	Versioning and times added
	2.1.3c	RP	22/05/03	Document finalized after testing
	2.1.3d	CS	4/06/08	New product options documented
				Note of generation of Filename
				Easting and Northing fields added to Type 10
				Record on WO File
				Financial year Field added in Type10 Rec in
				WC File.
	2.1.3d	IS,CB	16/06/11	Record types 7 and 11 added, missing and
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	V4.5	IS, CB	25/08/11	BOQ and WOL % Uplift changes added

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## **1. Introduction**

This document details the interface specification for interfacing between **highways by exor**, external contractor systems and corporate financial systems.

This interface operates by the use of ASCII comma separated files, which will be generated by **highways by exor** and the external systems involved.

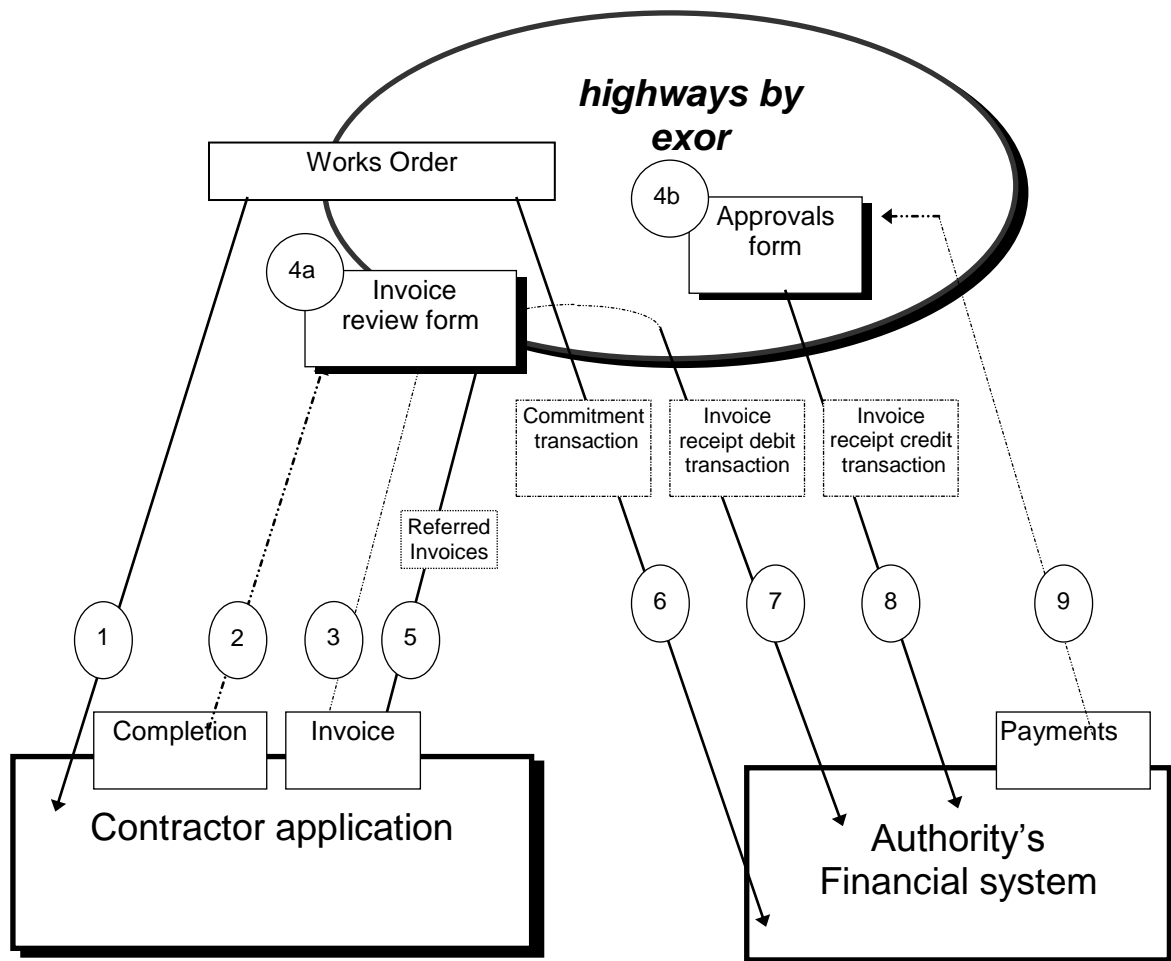
A number of electronic processes are catered for by these files including:

- Works orders
- Completion dates
- Invoice details
- Financial commitments
- Financial debits (invoice values)
- Financial credits (approvals for payment)
- Payments

This document details each of the interface files that **highways by exor** will generate and the required format of files needing to be processed back into **highways by exor** to complete the cycle.

It will be optional which of these electronic processes are implemented.

## 2. Brief Description of Functionality



----- Files to be processed by **highways by exor**  
 ———— Files to be created by **highways by exor**

1

A file is created containing details of each works order generated within **highways by exor**.

2 **highways by exor** processes files containing completion dates in advance of the completion details and costs.

3 **highways by exor** processes files containing invoices from the contractor including completion details and costs.

4a A facility within **highways by exor** to enable the completion and invoice details to be reviewed and monitored. This includes an option to review invoices before they are processed and correction of invalid invoice details.

4b A facility within **highways by exor** to approve payments against

5 A file is created of all referred invoices for referral back to the contractor. This includes details of why the claim has been rejected

6 A file is created containing a financial commitment transaction for each order raised within **highways by exor**.

7 A file is created containing financial debit record for all invoices successfully processed into **highways by exor**. This file will mirror transaction processed through stage 3.

8 A file is created containing financial credit records for claim approvals.

9 **Highways by exor** process files containing details of Payments that have been made to the Contractor by the external financial system following the approval.

### **3. Product Options**

#### **CIMALLEST**

If set to **Y**, the WO file will always contain estimated cost values for Work Order and BOQ costs

#### **CIMINCRMKS**

If set to **Y**, WO file will include Work Order and Work Order Lines remarks. This will add record types "07" and "11" to the CIM file

#### **COMPLEDATE**

When the flag is set to 'Y' the Completion date can be equal to or before the Instructed date. If the flag is set to 'N' the Completion date can be equal to or after the Instructed date.

#### **DISPBID**

Budget Bid Id.

Enter "Y" or "N".

The Contractor Interface Module appends the contents of this field onto the end of the works order line field when the works order extract is carried out creating the WO file.

If set to **Y** the Bid field becomes available at the bottom of Budgets - MAI3660. This will only be used when the Product option 'XTRIFLDS' = '2-4-0'.

#### **FCFORMAT**

Financial Commitment Format.

Enter "Y" or "N".

When set to "N" the format of the financial commitment file is in the standard format, otherwise it is in a general ledger format (Norfolk CC)

#### **IFUSEDEFXY**

Interface use Defect X,Y.

Enter "Y" or "N".

Enter **Y** to include the Defects X,Y co-ordinates in the CIM Work Order File if the work order line has an associated defect with co-ordinates.

#### **LZSUBCODE**

Interface, Leading zeros.

Enter "Y" or "N".

IF **N** remove leading zero from work category field on work order line in exported WO file

#### **REPAIRS**

Update the Defect complete date

Enter "0" or "1".

If set to **1** the defect complete date will be overwritten by the work order line complete date when automatically closing lines following the load of a completion file.

**WCCOMPLETE**

Full WC complete.

Enter “Y” or “N”.

When this option is set to “Y” it allows the WC file to complete a defect or repair.

When a WC file returned by the contractor, it provides a date by which the work is completed. If the product option WCCOMPLETE is set to **Y**, as well as storing the information on the works order line and changing the status to ACTIONED, it can close the repair and defect down, sets repair and defect completion dates.

Defects status are then at status COMPLETED ( if only one repair ). This enables a defect to be completed at a different date from the WI (Invoice) file – which is providing the return on the financial information associated with a work order line. If WCCOMPLETE is set to N, the the defect would be completed with the date in the WI file.

When using interfaces WCCOMPLETE should be set to Y. As WC files normally sent much earlier and prevents SUPERSEDING from occurring as defects are closed down.

**XTRIFLDS**

If this is set to **2-1-3**, then the following fields are included at the end of the Type 15 record in the WO (Work Order Extract) File.

- Bill of Quantity id
- Bill of Quantity parent id
- % item computation flag
- Rogue item indicator
- Rogue item description

These fields should also be included at the of record type 15 within the WI (Invoice File).

If these fields are not required the option should be set to **NA**.

**ZEROPAD**

If this is set to **Y** then the File Name of each file type is left padded with Zeros to 6 digits. If this is not required set the option to ‘**N**’.



## **4. Date Fields**

Throughout the specification where the date format is identified as DDMMYYYY the following formats will be permitted:

21062003  
21062003 09:23:00  
21-JUN-2003  
21-JUN-2003 09:23:00

The time will be separated with a space followed by hours, minutes and seconds.

If the time is not present then the date will be loaded with the time set to 00:00:01

Where the specification identifies a date field as DDMMYYYY then the date is accepted in that format only.

## **5. Creation of export files**

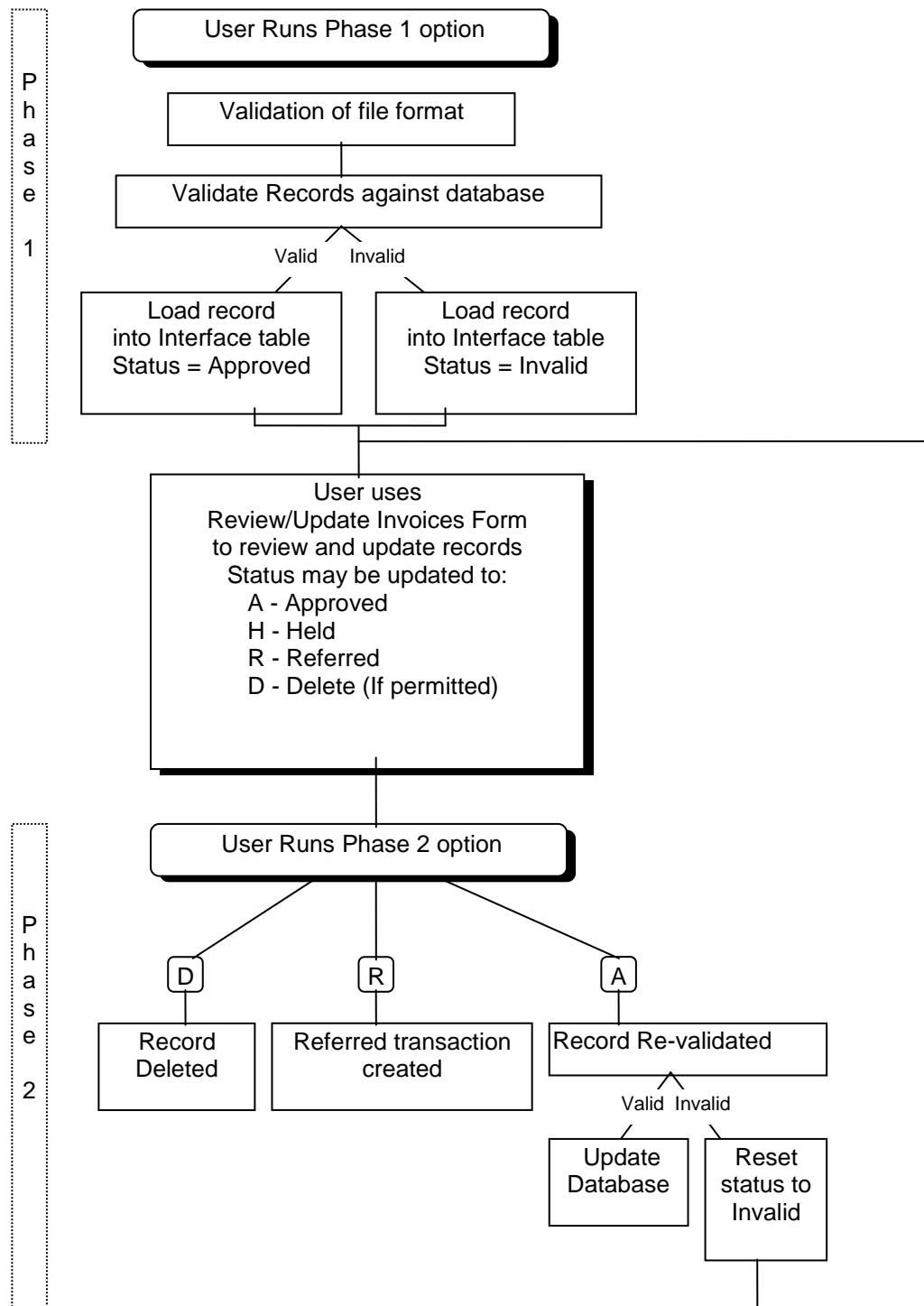
All transactions created by **exor** and all transactions received from external systems will be held in identified Oracle tables. This will enable users to enquire upon this data by the use of reporting tools such as Discoverer. The definition of these tables will also be freely provided to subscribers of the interfaces to enable them to develop their own interface facilities where desired.

Transactions generated by **exor** are extracted from the Oracle tables using A suite of standard extract facilities. These extracts may be run as often as the user requires for subsequent processing into the external systems. The extract facilities generate ASCII CSV files in the standard specified format. Each time an extract is run the date and time is logged and a run number generated which is used in the name of the extract files.

The interface functionality does not cater for the transfer of files to the appropriate location where the receiving systems reside.

## 6. Processing of import files

All files to be processed into **exor** will be validated through two phases.



**Phase One**

The first phase will have two stages

1. Validation of the file format
2. Validation of the contents against the database.

The user will be able to identify the location of the file to be processed but functionality does not include for transfer of the files before or after processing.

If the file is in the correct format the data within the file will be loaded into Oracle tables. Within these Oracle tables each record will be allocated a status and will then be available for viewing through a new form provided within **highways by exor**. This new form will allow the user to set the transaction status to

- (A) pproved
- (H) eld
- (R) eferred.
- (D) eleted

By default all transactions will be set to “Approved” unless the transaction fails any validation check in which case the status will be set to invalid. The form will allow users to review each transaction and correct any errors.

The deleted status will only be allowed if a system option is set accordingly.

**Phase two**

The second phase will update the highways database with all transactions that have an Approved status. Before each transaction is processed it will be re-validated and if invalid the transaction will be reset to a status of Invalid.

All records processed onto the database will have the status updated to (P)rocessed. The records will not be deleted and will remain on file for future interrogation.

All records with a status of “D” will be deleted from the transaction tables.

All records with a status of “R” will have a “referred” transaction created within file 5.

## **7. General format of files**

Each file involved in the interface process will be formatted in a similar manner.

- Each record will be on a new line.
- Each record will commence with a two digit record type
- Each file will commence with a header record of type "00"
- Each field within the record will be comma separated
- Each field will be of variable length

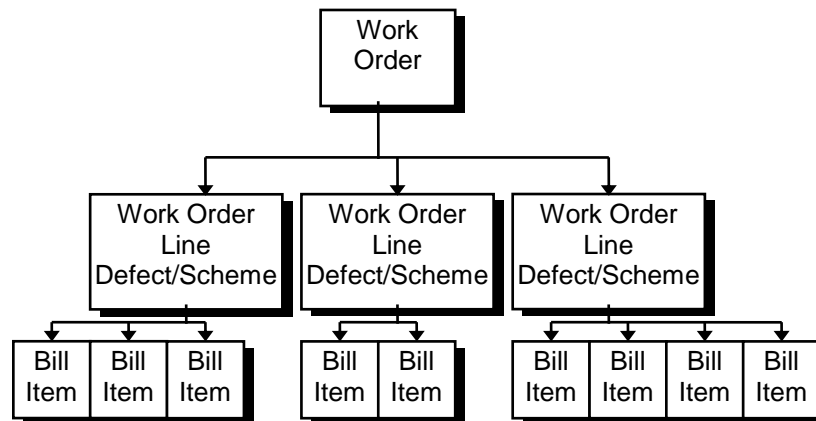
All defect ids will be null for small schemes and cyclic orders, all schedule ids will be null for small schemes and defect orders.

All financial year, percentage adjustment and percentage adjustment reason code fields are not populated at the moment and are reserved for future use.

Commas within data should be prevented, as these will be interpreted as field separators.

Fields marked with an asterisk within the file descriptions are currently redundant. These may be reviewed at a later stage and may therefore become mandatory at a later date. Providers of systems feeding into **exor** may wish to consider populating these fields to ensure compatibility at a later date.

## 8. Structure of data within highways by exor



Extracting a single or multiple defects from the system creates a works order. A works order may also consist of one or more small schemes, which are identified whilst the order is being created. Each of these defects or small schemes is referred to as work order lines. Within each work order line there may be many bill items.

Budget codes are allocated at works order line level; completion's may also be applied at this level. It will therefore be necessary for transaction records to be processed at order line level instead of work order level.

This requirement is reinforced by the fact that many Contractor and financial systems cannot operate at a two tier level to match **highways by exor**.

## **9. The works order file (1)**

Works order transactions should only occur for orders being issued to Contractors who wish to receive details electronically. A new flag will be provided on the Contractor details to indicate whether this Contractor receives electronic orders.

A separate order file must be created for each Contractor and therefore a contractor identifier will need to be included within the file name. A new three-character Contractor identifier will be provided on the contractor details for this purpose.

A sequence will be maintained within **exor** and will be incremented each time a new file is created. This will assist users in managing files.

The file name created will be "WO999999.XXX" where

"XXX" = the Contractor identifier.  
"999999" = sequence number

**Note :** the file name will be left padded with zeros, to 6 digits if Product Option 'ZEROPAD' is set to Y. For example WO000012.CON

**Record type sequence (example)**

00	Header record
05	Order record
06	Order description (line one)
06	Order description (line two etc.)
07	Order remark or comment
10	Order line
11	Order line remark or comment
15	Bill item
15 etc.	Bill item
10	Order line
11	Order line remark or comment
15	Bill item
15 etc.	Bill item
05	Order record
06	Order description
07	Order remark or comment
etc.	
20	Check record

***Header record (Mandatory)***

"00"	Record Type
XXX	Contractor identifier
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

**Order record (Mandatory)**

"05"	Record Type
X	Transaction Type (see note 1)
X(16)	Work Order number
XX	Scheme Type
X(10)	Contract Reference
X(40)	Originator
DDMMYY	Date Instructed
DDMMYY	Target date for completion
9(11).99	Total Order Cost
9(11).99	Labour Units
X	Interims allowed Y/N
X	Risk Assessment required Y/N
X	Method Statement required Y/N
X	Works Programmes required Y/N
X	Additional Safety Statement required Y/N
DDMMYY	Commence by date
X(5)	Financial Year

**Notes:**

1. There are three types of order transaction **Create**, **Delete** and **Amend**

**Create**

Will occur upon the initial committing of an instructed date against a works order. All child records for this order are therefore new.

**Delete**

Will occur if the instructed date is cleared and committed or the order is cancelled. In this situation all the works order line and bill item records will be included in the file. All order line and bill item records for this order are therefore cancellations.

**Amend**

Will occur upon the committing of any changes to either the order, the works order lines or the bill item lines. In this situation only the work order lines that have changed will be included in the file.



**Order Description (Recurring for each description line)**

"06"	Record Type
X(110)	Description

**Order Comment (Recurring for each comment line)**

"07"	Record Type
X(1000)	Description

**Note**

In order to include this record type and the "11" record type in the WO file a new Product Option (CIMINCRMKS) will need to be set to 'Y'.

**Work Order Line (Recurring for each order line)**

"10"	Record Type
9(8)	Unique work order line number
9(8)	Defect ID.
9(9)	Cyclic schedule Id
X(20)	Road Id
X(80)	Road Description
X(80)	Defect Location
X(254)	Defect Description
X(254)	Defect Special instructions
X(4)	Defect Priority
X(4)	Defect Type
9(6)	Defect Chainage
X(1)	XSP
99.99	% adjustment – Reserved for future use
99	% adjustment reason code – Reserved for future use
X(10)	Work Category (sub/sub item code)
X(60)	External cost code
X(2)	Defect activity
X(2)	Defect Asset type (inv items all)
9(8)	Defect Asset ID
DDMMYY	Defect Date inspected
X	Repair category
X(40)	Repair description
X(4)	Repair treatment
DDMMYY	Date repair due
Number	Easting
Number	Northing
X(10)	BOQ percentage uplift Standard Item Code
X(254)	BOQ percentage uplift Standard Item Name
X(10)	Work Order Line percentage uplift Standard Item Code
X(254)	Work Order Line percentage uplift Standard Item Name

**Note**

An indicator added to Contracts Form(MAI3880) will be used to determine whether the BOQ and WOL Percent Uplift Item Code details are included, or not.



**Order Line Comment (Recurring for each line)**

"11"	Record Type
X(1000)	Description

**Note**

In order to include this record type and the "07" record type in the WO file a new Product Option (CIMINCRMKS) will need to be set to 'Y'.

**Bill Item (Recurring for Bill Item)**

"15"	Record type
9(9)	unique work order line number
X(11)	Schedule item code
9(6).99	Dimension 1
9(6).99	Dimension 2
9(6).99	Dimension 3
9(6).99	Quantity
9(6).99	Rate
9(6).99	Cost
99.99	% adjustment – Reserved for future use
99	% adjustment reason code – Reserved for future use
9(10)	Bill of Quantity id
9(10)	Bill of Quantity parent id
X	% item computation flag
X	Rogue item indicator
X(254)	Rogue item description

**Check Record**

"20"	Record Type
9(7)	Number of records (Types 05,06,10 or 15)
9(11).99	Total Value of all orders

## **10. The completion's file (2)**

This file will contain dates that work order lines have been completed. The purpose of this file is to enable the Contractor to notify the client of completion's prior to raising an invoice. The actual completion details will not be received until the invoice is issued.

The file name will be "WC9999999.XXX" where:

"XXX" = the Contractor identifier.  
"999999" = the file sequence number

**Note : if product Option 'ZEROPAD' is set to 'Y', the completion file name must be left padded with zeros' to 6 digits, e.g. WC000023.CON**

To process this file through phase one the user will be prompted to enter the following details:

The Contractor  
The file path  
The sequence number

Phase one will validate:

The file name against the selected contractor identifier to ensure these match.

The work order line is at the instructed stage.

The order line was issued to the appropriate contractor

For each valid transaction the work order line status will be set to a new status of "Actioned" and a new repair date column will be set to the date identified within the transaction.

The Contractors comments within this file will not be processed into maintenance manager but will be available for viewing within the new Invoice review form.

**Header record (Mandatory)**

"00"	Record Type
XXX	Contractor identifier
999999	Sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

**Completion record (Mandatory)**

"10"	Record Type
X(16)	Order Number
9(9)	Unique work order line number
* 9(8)	Defect ID
* 9(9)	Cyclic Schedule Id
DDMMYYYY	Date Completed (Repaired date)
* HH:MM:SS	Time Completed
* X(5)	Financial Year
* X(254)	Comments (not processed into <i>mm</i> )

**Check Record**

"15"	Record Type
9(7)	Number of records (of type "10") in file

## 11. The Invoice file (3)

The purpose of this file is to identify the actual completion details for payment purposes.

The file name created will be "WI999999.XXX" where:

"XXX" = the Contractor identifier.  
"999999" = the file sequence number

**Note : if product Option 'ZEROPAD' is set to 'Y', the Invoice file name must be left padded with zeros' to 6 digits, e.g. WI000023.CON**

To process this file the user will be prompted to enter the following details:

The Contractor  
The file path  
The sequence number

The system will maintain the "last sequential invoice file number" processed against each contractor. This can then be used to default the sequence number once the Contractor has been identified.

Phase one will validate:

The file name against the selected contractor identifier to ensure these match.

The work order line is at the appropriate stage for the type of invoice.

The order line was issued to the appropriate contractor.

By default all invoices with no validation errors will be set to a status of Approved for final processing into maintenance manager.

The user will be able to refer invoices to prevent them being processed through phase 2. These will be returned to the Contractor in the rejected claims file (5) and will then remain indefinitely until approved or deleted.

The user will be able to hold valid invoices to prevent them being processed. These invoices will then be held indefinitely until they are approved or deleted.

The interim invoice number (if applicable). An interim cannot be processed if a later interim or a final has already been processed.

There will be three types of invoice:

Interim  
Final  
Post

Interim and Final Claims will contain all completion details to date and will therefore replace all existing actual claim details already processed. This method will allow the user to process the most recent invoice without implications of not processing any earlier interims. To ensure the latest invoice is being processed the transaction record must contain the interim invoice number. The system will not allow an earlier interim to be processed or an interim after the final invoice.

Post invoices will contain any supplementary completion details and will therefore be added to or update any existing actual claim details. The system will not allow any post invoices to be processed before the final has been processed. Because actual quantities are being updated the system will need to work as follows:

For a +ve bill item insert a new bill item line.

For a -ve bill item

1. Validate to ensure a bill item line already exists with that bill item
2. If a bill item does not already exist with that bill item reject invoice
2. Subtract the Post claim qty from the bill item line
3. If the Post claim qty exceeds the line qty search for more lines
4. Repeat step 2 - 3
5. If Post Claim qty exceeds total qty on work order line reject invoice

#### Interim

An interim invoice will be invalid if a Final invoice has already been processed (Status set to completed). Because it is important that an interim starts updating the actual quantities the completion date on the work order line will be set but the status will be set to "Part Comp"

#### Final

A final invoice will be invalid if a Final invoice has already been processed (Status set to completed). This type of invoice will set the status of the works order line to "completed". The completion date will also be set to the completion date identified in the transaction record updating any dates provided by earlier interims.

#### Post

Will occur where a final invoice has been issued but additional works are now being claimed. or credited. These can only be processed against completed work order lines with a status of completed because the quantities are additions and not running totals.

### Record type sequence (example)

00	Header record
05	Claim record
10	Order line
15	Bill item
15 etc.	Bill item
10	Order line
15	Bill item
15 etc.	Bill item
05	Claim Record
etc.	
20	Check record.

### Header record (Mandatory)

"00"	Record Type
XXX	Contractor identifier
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

### Claim record (Mandatory)

"05"	Record Type
X	Claim Type (see note 1)
9(3)	Interim sequence number
X(20)	Contractors claim reference
DDMMMYYYY	Claim date
X(16)	Work Order number
X(10)	Contract Reference
* X(40)	Originator
* DDMMMYYYY	Date Instructed
* DDMMMYYYY	Target date for completion
9(11).99	Total order Claim value
* DDMMMYYYY	Date works started on order
* DDMMMYYYY	Date order fully completed (blank if not complete)

### Work Order Line (Recurring for each order line)

"10"	Record Type
9(8)	Unique work order line number
9(8)	Defect ID.
9(9)	Cyclic schedule ID
9(11).99	Claim value this order line
99.99	% adjustment – Reserved for future use
99	% adjustment reason code – Reserved for future use
DDMMMYYYY	Date Completed



**Bill Item (Recurring for Bill Item)**

"15"	Record type
X(10)	Schedule item code
9(10).99	Dimension 1
9(10).99	Dimension 2
9(10).99	Dimension 3
9(10).99	Quantity
9(10).99	Rate
9(10).99	Cost
99.99	% adjustment – Reserved for future use
99	% adjustment reason code – Reserved for future use
9(10)	Bill of Quantity id
9(10)	Bill of Quantity parent id
X	% item computation flag
X	Rogue item indicator
X(254)	Rogue Item Description

**Check Record**

"20"	Record Type
9(7)	Number of records (of type 05,10 or 15) in file
9(11).99	Total value of all invoices in file.

## **12. Invoice Review form (4a)**

This is a new form that will enable the users to review and correct invoice details that have been processed through phase one.

The form must enable users to query invoices based on a number of columns:

- The Originator of the order
- The Authoriser of the order
- The Order Number
- The Invoice number
- The transaction File number

The user will be able to view transactions in summary format (many to a screen) or detailed format (one to a screen) as per the existing defects screens.

The form will work in a similar manner to the existing phase two forms for DCD inspections loading. It will allow the user to view each claim. Update/Correct details and set status codes for further processing.

Each transaction will have a status code as follows.

(A)pproved

The record will be processed through phase 2 updating the database with details.

(H)eld

The record will remain in the Invoice review form and will not be processed through phase 2. These records will remain indefinitely until the status is updated.

(R)eferred

The record will be referred back to the Contractor with any comments in the referral file (5). These records will remain indefinitely until the status is updated. A record will only be referred once for each time the status is set to Referred.

(D)eleted

The record will be deleted when phase 2 is next run. There will be a system option to identify whether this stage is valid. If this status is not valid then users will need to obtain POST invoices or further INTERIMS to adjust required values and then APPROVE both invoices to achieve the required totals. This system option will be provided at Contractor level.

By default all completions with no validation errors in phase one will be set to status (A)pproved.

A button will be provided on this form to process the file transactions with a status of “A” through phase two. All validations should be repeated as per phase one and any invalid transactions reset to “I”. This option will also delete transactions with the “D” status and create referred records for transactions with a status of “R”.

### **13. Referred claim file (5)**

The purpose of this file notify the Contractor of any referred claims.

Records in this file will have been created by setting the status of an invoice transaction to "Referred" and then processing the file through phase 2.

A sequence will be maintained within **exor** and will be incremented each time a new referral file is created. This will assist users in managing files.

The file name created will be "WR999999.XXX" where:

"XXX"	= the Contractor identifier.
"999999"	= the file sequence number.

**Note :** the file name will be left padded with zeros, to 6 digits if Product Option 'ZEROPAD' is set to Y. For example WR000012.CON

#### **Header record (Mandatory)**

"00"	Record Type
XXX	Contractor identifier
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

#### **Referred record (Mandatory)**

"05"	Record Type
X	Referral type (H-held R-rejected)
X(20)	Contractors claim reference
X(16)	Work Order number
9(9)	Unique work order line number
9(8)	Defect ID.
9(9)	Cyclic Schedule Id
9(11).99	Invoice value this order line
X(254)	Reason for referring

#### **Check Record**

"10"	Record Type
9(7)	Number of type 5 records in file
9(11).99	Total value of invoices in file.

## **14. Financial commitment file (6)**

The purpose of this file is to issue commitments to external financial systems.

These records will be created by the initial works order process and any subsequent updates to the works order costs.

A file sequence will be maintained within **exor** and will be incremented each time a new file is created. This will assist users in managing files.

Consideration is to be given to include a summary format option which contains a summary record value for each distinct works category and cost code combination.

The file name created will be "FI999999.DAT" where:

"999999" = the file sequence number.

**Note : the file name will be left padded with zeros, to 6 digits if Product Option 'ZEROPAD' is set to Y. For example FI000012.CON**

There will be three types of Commitment record

C - create  
occurs when the order is first instructed.

A- amend  
Occurs when the value of any work order line is changed. The value will be the revised cost and not the variation. An amend record will also be created when a work order line is deleted from a work order. In this case the Defect id, Schedule Id, Priority, Work category and Cost Code will all be set to null.

D- delete  
occurs when an order is cancelled.

**Header record (Mandatory)**

"00"	Record Type
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

**Commitment record (Mandatory)**

"05"	Record Type
X	Commitment type (C,A, or D note1 on order file)
DDMMYYYY	Commitment date (instructed)
X(16)	Order number
9(9)	Unique work order line record
9(8)	Defect Id
9(9)	Cyclic schedule Id
9(3)	Defect Priority
X(10)	Contractor Code
X(10)	Contract Code
9(11).99	Commitment value
X(10)	Works category code
X(60)	Cost code (budget heading)
X(5)	Financial Year

**Check Record**

"10"	Record Type
9(7)	Number of debit records in file
9(11).99	Sum of all Commitment values

## **15. Financial debit transaction (7)**

The purpose of this file is to issue debit transaction records to external financial systems. These records notify the financial systems of claims that have been received from the Contractor for approval.

These records will be created by the phase two processing of “Approved” claim records into the new claim verification form.

A file sequence will be maintained within **exor** and will be incremented each time a new file is created. This will assist users in managing files.

The file name created will be “FD99999.DAT” where:

“999999” = the file sequence number.

### **Header record (Mandatory)**

“00”	Record Type
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

### **Debit record (Mandatory)**

“05”	Record Type
DDMMYYYY	Claim date
X(20)	Claim Reference
X(16)	Order number
9(9)	Unique work order line record
9(8)	Defect Id
9(9)	Cyclic Schedule Id
X(10)	Contractor Code
9(11).99	Invoice value
X(10)	Works category code
X(60)	Cost code (budget heading)
X(5)	Financial Year

### **Check Record**

“10”	Record Type
9(7)	Number of debit records in file
9(11).99	Sum of all Debit invoice values

## **16. Financial credit transaction (8)**

The purpose of this file is to issue credit transaction records to external financial systems. These records notify the financial systems of approvals to pay claims that have been received from the Contractor.

These records will be created by the existing payment run facilities within exor.

A file sequence will be maintained within **exor** and will be incremented each time a new file is created. This will assist users in managing files.

Consideration is to be given to include a summary format option which contains a summary record value for each distinct works category and cost code combination.

The file name created will be "FC999999.DAT" where:

"999999" = the file sequence number.

**Note :** the file name will be left padded with zeros, to 6 digits if Product Option 'ZEROPAD' is set to Y. For example FC000012.DAT

### **Header record (Mandatory)**

"00"	Record Type
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

### **Credit record (Mandatory)**

"05"	Record Type
DDMMYYYY	Claim date
9(9)	Payment ID
X(20)	Claim Reference
X(16)	Order number
9(9)	Unique work order line record
9(8)	Defect Id
9(9)	Schedule Id
X(10)	Contractor Code
9(11).99	Approval value
X(10)	Works category code
X(60)	Cost code (budget heading)
X(5)	Financial Year

### **Check Record**

"10"	Record Type
9(7)	Number of Credit records in file
9(11).99	Sum of all Approval values



## ***17. The Payment approval form***

This form will replace the existing “Deselect items for payment” form MAI3842.

### ***Current Position***

Payment runs currently operate using the status code. When a work order line is set to completed the payment run will automatically select it for payment. The user must use the “Deselect items for payment” form before the payment run to set the status to “HELD”. This will prevent the order line from being paid. Once a work order line is processed through the payment run the status is set to “PAID”.

## 18. Payment transaction (9)

The purpose of this file is to confirm to exor that a payment has been made by the external finance system.

The file name will be "FP999999.DAT" where:

"999999" = the file sequence number.

**Note :** the file name will be left padded with zeros, to 6 digits if Product Option 'ZEROPAD' is set to Y. For example FP000012.DAT

### Header record (Mandatory)

"00"	Record Type
999999	File sequence number
DDMMYYYY	Date file created
HH:MM:SS	Time file created

### Payment record (Mandatory)

"05"	Record Type
* DDMMYYYY	Claim date
9(9)	Payment ID within exor
X(20)	Contractors Claim Reference
X(20)	FIS Payment reference
X(16)	Order number
9(9)	Unique work order line record
* 9(8)	Defect Id
* 9(9)	Schedule Id
* X(10)	Contractor Code
9(11).99	Payment value
X(5)	Financial Year

### Check Record

"10"	Record Type
9(7)	Number of payment records in file
9(11).99	Sum of all payment values

These payment records will be validated against the new Payment run table. The payment table will be updated accordingly with optional columns as follows:

The FIS payment reference (i.e Cheque number etc.)  
The Payment value.

The payment value may be different to the approved value but will not be validated or reported via an errors file.

## 19. Summary of status codes and date fields

As a result of processing interim and post invoices it has been necessary to review the status codes and dates held against work order lines. In particular the Completed date held against work order lines is used to identify when the Actuals columns are populated instead of the estimated columns. The following summary defines the result of the proposed product changes identified in the previous sections.

Each work order line will now have the following columns:

Status  
Repaired Date  
Completed Date  
Invoice Flag.

These will be populated as follows:

Work instructed:

Status	<b><i>Instructed</i></b>
Repaired Date	
Completed Date	
Invoice Flag	

Completion Record processed

Status	<b><i>Actioned</i></b>
Repaired Date	<b><i>Set</i></b>
Completed Date	
Invoice Flag	

Interim Invoice processed

Status	<b><i>Part Comp.</i></b>
Repaired Date	<b><i>Set</i></b>
Completed Date	<b><i>Set</i></b>
Invoice Flag	<b><i>O (outstanding)</i></b>

Final Invoice processed

Status	<b><i>Completed</i></b>
Repaired Date	<b><i>Set</i></b>
Completed Date	<b><i>Set</i></b>
Invoice Flag	<b><i>O (outstanding)</i></b>

The invoice flag will then progress as follows:

Approved invoices awaiting payment run	<b><i>O</i></b>
Held invoices	<b><i>H</i></b>
Both Held and Approved invoices awaiting payment run	<b><i>B</i></b>
All invoices approved and processed through payment run	<b><i>A</i></b>

## 20. An explanation of percentage items introduced at version 2-1-3

Percentage items have been implemented using a new Type of SOR Item The following steps are required to implement these percentage items.

*First a unit of measurement to define a percentage item is created example units of measurement might be "PERCENT", "%", or "PCENT". The product option "PERCITEM" must then be set to match the value selected.*

*Schedule of rate (SOR) items are created to represent the different types of percentage variations. These items must have the unit of measurement value set to the selected value above.*

Once the percentage items have been created they can then be applied to works issued through Maintenance Manager. Users should refer to the Maintenance Manager manual for more details. The following example is intended to explain how the interfaces handle these percentage items.

This example uses a banding scenario where a Red band is created to indicate that all works are increased by a set % because they are to be performed at a weekend.

A SOR item called 'RED' is created and its unit of measurement is set to "%".

This '%' unit of measure will signify to the Works Ordering system that this is a percentage item that can be applied to one or more SOR items to adjust the rate associated with an item by the identified percent.

It is possible to add Multiple '%' items to a given SOR i.e apply one COLOUR Banding uplift because the work is on the weekend. Then apply another % uplift because it is on a street with Special Engineering Difficulty.

Therefore it is possible to create a single works order with many different '%' items (or COLOUR BANDS) applied.

We might have the following SOR items defined:-

<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Rate</b>
10/001	Apply 10mm Chips to 6mm Depth	sq.m.	7.00
12/001	3 Lane Traffic Management Coning	ln.m	12.00
RED	10% Uplift for Weekend	%	10
BLUE	5% Uplift for Evening	%	5

We then create a work order with two separate jobs at two different locations.

Job one consists of:

<i>Item</i>	<i>Qty</i>	<i>Rate</i>	<i>Total</i>
10/001	100	7.00	700.00
12/001	50	12.00	600.00

We can then Apply a % uplift or decrease to any or all of these items. Lets assume we decide to apply the red rate because this job is being worked at a weekend. The user would mark all items and then apply the % using the “Apply Percentage” button.

The system would update the job as follows:

<i>Item</i>	<i>Qty</i>	<i>Rate</i>	<i>Total</i>
10/001	100	7.00	700.00
->RED	1	10	70.00
12/001	50	12.00	600.00
->RED	1	10	60.00

As you can see the percentage items are NOT added to the base items but are held on the job as SOR items in their own right with a Total Cost. These are then passed across in the interface as items in the normal way.

When passing actuals back to exor the % items should have their own actuals passed back. For example if we actually carry out 1000.00 square meters of 10/001 then we would expect 10/001 to have an actual of 1000 and the associated RED to have an actual of 100 (10%).

***It is possible to have more than one percentage item per order line***

<i>Item</i>	<i>Qty</i>	<i>Rate</i>	<i>Total</i>
10/001	100	10	10000.00
->SOR RED	1	10	1000.00
->SOR BLUE	1	5	500.00

In this case the items may act upon each other. For example the total for blue above could be 500 or 550. This depends on a product option within ***highways by exor***, which identifies if % items are normal (N) or cumulative (C).

The interfaces identify this rule using a flag at the end of the type 15 records and are labeled as the “percent\_band\_computation\_flag”.

For item Blue above if the flag was set to ‘N’ for normal computation then the value will be 500. (5% of 10,000) If the flag were set to C for Cumulative then the value would have been 550 (5% of 10,000 + 5% of 1,000).

### ***A flag within the file indicates which items the percentage applies to.***

In order to identify which % items are applied to which regular standard items Exor has introduced a parent and child relationship. A percentage item (the child) will therefore always have a reference to the standard item (the parent) it applies to.

The following fields were added to the type 15 records to represent this relationship:

<b>9(10)</b>	<b>Bill of Quantity id</b>
<b>9(10)</b>	<b>Bill of Quantity parent id</b>
<b>X</b>	<b>% item computation flag</b>

The following example shows the order details on the left and the value of the above settings in the type 15 records on the right.

<i>Item</i>	<i>Qty</i>	<i>Rate</i>	<i>Total</i>	
10/001	100	10	10000	(100, , , )
RED	1	10	1000	(103,100,N, , )
10/002	100	10	10000	(101, , , )
RED	1	10	1000	(104,101,N, , )

The following explains these values for the first two items;

(100,,,) )	100 represents unique boq-id.
(103,100,N,,) )	103 represents unique boq-id of % item.
	100 represents the parent-id to which % attached.
	N represents Normal calculation 10% of 10000.
(101,,,) )	101 represents unique boq-id.
(104,101,N,,) )	104 represents unique boq-id of % item.
	101 represents the parent-id to which % attached.

Invoice records returned on the above where there have been no changes would need to return the same values.

Where an additional item is completed that was not included on the original order the returning invoice file cannot provide a bill of quantity id as it has yet to be created within **highways by exor**.

Therefore, where this occurs the boq\_id will have a negative relative sequence number. Negative numbers enable distinction of new items not previously defined on the estimate and permit percentage item association to the parent where required.

So new items not previously on an order would appear as follows:

<i>Item</i>	<i>Qty</i>	<i>Rate</i>	<i>Total</i>	
10/004	100	10	10000	(-1,,N,,)
RED	1	10	1000	(-2,-1,N,,)
BLUE	1	5	55	(-3,-1,C,,)
10/005	100	10	10000	(-4,,,) )

The value of the boq\_ids -1,-2,-3,-4 implies the order of creation in the external system.

Each new work order line will recommence at -1.

There is also a need to be able to distinguish between new items ( actuals not previously on order) and updates on these items.

If an item is returned from the contractor that has a negative number, denoting new item or replication of existing item, then create boq with standard item code provided

If an item has a null in the boq\_id, then update existing boq item only if there is a single item of this type on the works order line. If there is multiple items of the same type and a null boq-id is provided, the system would not know which item to update, therefore unable to process, reject . This should enable a contractor to provide a future update on a new boq item where the boq-id is not known.

## ***21. An Explanation of Rogue items***

Rogue items enable returns at different rates. They are not linked to other items ie they are items in their own right. Items of this type permit alterations to standard descriptions and therefore maybe of interest to the contractor system. Version 2.3 of the spec enables descriptions to be passed and received.

Assume an estimate of:

**SOR VVV Qty 1 Rate 100 Amount 100 Descr clear RTA (750,,,R,clear RTA)**

(VVV is defined as a rogue Item within the exor system)

If the actual amounts for the rogue vary and the description remains the same then the file should be returned as follows, resulting in an update to an existing exor item:

**SOR VVV Qty 1 Rate 700 Amount 700 (750,,,R,)**

A null description will not amend the original text. The actual rates and quantities would be different. The returning item should reference the original boq-id, thus causing an update to the existing item within the exor system.

If, however, the returning description and cost are different from the original then the following should be returned to prevent overwriting of the original text.

**SOR VVV Qty 1 Rate 1800 Amount 1800 Descr clear RTA and patch (-1,,,R,clear RTA and patch)**

-1 signifies a new item is to be created within the exor system of the same type. This will create a new boq of the same type VVV within the exor system. This procedure enables an audit trail of differing texts.