

NETA Change Form

Title		Version No.
TAI2254 Possible Ambiguity in Section P Provisions Relating to Overwrite Contract Notifications		0.2
		LogicaCMG Reference
		ICR797
ELEXON Reference	Date CP Received	Date IA Issued
TAI2254	10 th February 2007	20 th February 2007
LogicaCMG Contact Name	Baseline for Impact Assessment	
Gemini Carrington	TAI 2254.doc dated 16 th January 2007, Email from Adam Lattimore dated 6 th February 2007, Meeting with John Lucas 13 th February 2007.	
Price Breakdown		
Item description	Remarks	Price (ex VAT)
Change Specific		£ 788,600
Release Costs		£ 230,926

Total Price (ex VAT)	£ 1,019,525
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Price Tolerance	25%
Justification for Price Tolerance	
25% Tolerance has been added due to the limited time available to assess this complicated change and the number of issues arising during discussions.	

Project Duration	38 weeks
Cut Off Date for Inclusion in Specified Release (if applicable)	
N/A	

Operational Price (e.g. per annum or event) (ex VAT)	£0
Rationale	
N/A	

Annual Maintenance Price (ex VAT)	£0
Rationale	
The Annual Maintenance Price is zero under the agreement commencing on 1 January 2005.	

Validity Constraints	
<ul style="list-style-type: none"> • Price and duration assume that this change is developed in isolation and the effects of other changes are excluded. • No allowance is included for the final solution being different from the baseline. • No allowance is included for supporting Release Audit activities. Any effort will be charged at contracted T&M rates • No allowance is included for supporting ELEXON assurance activities. Any effort will be charged at contracted T&M rates • No allowance is included for End to End/Participant Testing activities. Any effort will be charged at contracted T&M rates • No allowance is included for Walkthrough activities. Any effort will be charged at contracted T&M rates • No allowance is included to support ELEXON in parallel run testing activities <p>The validity period for this assessment is 30 days and is based on the following payment schedule:</p> <ul style="list-style-type: none"> • LogicaCMG will invoice 30% on receipt of Purchase Order or authorised start of work, 30% on completion of first build phase, 30% on live implementation and 10% on successful completion of the Success Criteria or one month after live implementation, whichever is sooner. 	
Authorised Signature	Date Signed

Requirements and Solution
<p>Brief Summary of Change</p> <p>On 5 February 2007, the BSC Panel raised Modification Proposal P210, which identifies five discrepancies between the behaviour of the ECVA Service (as documented in the ECVA Service Description) and Section P of the BSC:</p> <ol style="list-style-type: none"> 1. Effect of an overwrite notification on Settlement Days beyond its Effective To Date; 2. Part day overwrites of notifications; 3. Business validation of notifications; 4. Request from Parties and Agents not to receive notification of validation failures; and 5. Refusal and rejection of notifications for credit reasons. <p>LogicaCMG have already provided an assessment for items (1) and (2) in the previous version of this Impact. However, this assessment assesses the impact of bringing the ECVA Service into line with the BSC in regards to all 5 items.</p>
<p>LogicaCMG's Proposed Solution</p> <p>This proposal assess all 5 items described above:</p> <p><u>Item 1: Effect of an overwrite notification on Settlement Days beyond its Effective To Date And Item 2: Part day overwrites of notifications:</u></p> <p>In order to implement the proposed behaviour, the ECVA Notification loaders (both ECVN and MVRN) will be modified so that the logic of processing Settlement Periods not supplied in an overwrite Notification is changed from being interpreted as 0 to being interpreted as being unchanged from the previous value. Furthermore, Notification loaders will be modified so that processing the overwrite Notification does not have any effect on sections of the existing Notification outside the date bounds of the overwrite Notification itself.</p> <p>As a result of work already part implemented as part of P98 but never made operational, some of the changes needed to effect the proposed behaviour are already available in the codebase but are untested. The Omitted Data Flag coding was intended to provide submitters with the ability to control how the ECVA processes an overwrite Notification. The choice was either to process the Notification as ECVA does currently on live, or to operate according to the behaviour desired by this Impact Assessment. The switching ability and the application of either method based upon the flag value are in place in the codebase but the controlling mechanism is not effective in the current software.</p> <p>The ability to change the effect of applying the overwrite Notification was to be facilitated through the addition of a new flag in the Notification flow itself, but for various reasons, that change was never implemented.</p> <p>The code change included the ability to operate using default behaviour for when the flag was not supplied at all. Given that the change to the Notification flow specification was not enabled, this is the way that Notification processing operates today. The default behaviour is to leave Notification processing operating as it always has done.</p> <p>Therefore, in order to implement the behaviour required by this Impact Assessment but without requiring the controlling flag to be present in the Notification flow, the default</p>

behaviour of the Notification loaders will be switched to follow the alternative path already in the code where unspecified Settlement Periods and Settlement Dates outside the boundaries of the overwrite Notification are left unchanged.

The ECVAAs also has the ability to change Notification values through a SQL*Forms Client front end application. This application modifies the submitted data directly in the database tables and does not operate by generating Notifications and so is unaffected.

The ECVAAs also operates the ECVAAs Web Service which allows suitably privileged users to submit Notifications to the ECVAAs. The Notifications submitted via ECVAAs Web are Notifications in the true sense since data entered via the web form is physically materialised into a file that ends up being loaded into the ECVAAs System by the same Notification loaders that process Notification files submitted via FTP. The ECVAAs Web Service is therefore not impacted by this change and will operate using the behaviour required in this Impact Assessment once the Notification loaders have been modified.

VNNR Processing

The VNNR processing code consists of a SQL*Forms Client Front End application, Pro*C back-end server application code, Pro*C back-end server reporting code and PL/SQL back-end database application code. These will all be impacted by the change in behaviour of the Notification loaders since the process utilises parts of the Notification processing code to implement the nullification. Full testing of this area will be required.

In addition to the change in the Notification loader software, scripts and procedures surrounding the existing Notification Nullification process will have to be amended. These processes operate by constructing Notification files suitable for nullifying ECVNs and MVRNs from a specified Settlement Period onwards. These processes and procedures rely upon the existing logic where an overwrite Notification replaces an existing Notification in its entirety from a given point onwards.

Documentation Changes: (1&2)

1. ECVAAs URS
2. ECVAAs Service Description.
3. ECVAAs System Specification.
4. ECVAAs Technical Specification.
5. IDD Part 1 (word document) – the Interface Requirement section of ECVAAs-I004 states: "Note that ECVN Withdrawal is implemented by sending a notification containing a null ECV." Examples in section 7.24 would need revising.
6. IDD Part 1 Spreadsheet – removal of unnecessary OTD group (to remove confusion).

Item 3 - Validation at Settlement Period Level

The SGI Decoder will be modified so that it will allow certain fields to be treated differently than currently when it comes to data size validation. In these special cases where a field fails this validation rather than reject the flow the decoder flags the fact that the field failed in the associated holding table. The data value is not stored in the holding tables as it's too large but instead a NULL value is written.

The IDD will be changed to hold additional details and the configuration data used by the SGI Decoder, which is derived from this, will hold additional information to flag up this new feature. The holding tables, derived from the IDD, will also be modified to handle this new

feature.

The Notification Loader modules (ECVN & MVRN) will be modified to validate these fields based on the data in the holding tables:

- Where a NULL has been passed due to the file's data exceeding the IDD limit the SP record will be rejected.
- Where the MVRN Percentage field value is defined and it exceeds its valid bounds (0-100%) the SP record will be rejected.
- Where one or more SP records are rejected an appropriate Notification Feedback report will be generated to report details of failures.
- Where all defined SP data associated with a flow is rejected then the entire flow is rejected.

The Loader modules will trigger a Notification Feedback flow in cases where one or more SP records have failed validation failure.

The Notification Feedback flow (I009 & I010) will be modified to include additional information relating to individual SP validation failures.

Details of Work:

1. Change IDD Spreadsheet format to include additional column: "data type validation flag";
2. Change IDD Spreadsheet macros to handle additional column
3. Change the holding table build script (build_holding_tables.und) to read this new column and to generate an additional DB field against flagged items – FAILED_VALIDATION_FLAG;
4. Change the Database so that the configuration tables have an additional column to hold this new information;
5. Change build script (build_holding_tables.und) so that the flow configuration DB tables will include a new flag field ("data type validation flag") for the SGI Decoder to read, and populate this new field based on the IDD data;
6. Change SGI Decoder module (sgi_decoder.unr) to read additional flow configuration field and to modify its behaviour where this flag is set;
7. Change the business loader modules (ene_E0041_001_pb & enm_E0051_001_pb) carry out appropriate validation on the flow's impacted data fields, rejecting individual Settlement Period data as appropriate.
8. Change the Notification Feedback (enf_notification_fback) module in line with the flow's changes (additional reporting fields).

Documentation Changes:

7. 17-190573 (V0_1) B&D Technical Note - IDD & Holding Tables.doc (changes to build script);
8. Infrastructure DS (changes to SGI Decoder);
9. IDD P1 & P2 spreadsheets (new column and values);
10. IDD P1 doc (description of new columns relevance and meaning; Notification Feedback flow changes)
11. ECVAU URS, SS and DS (Notification Feedback flow changes; Notification validation functional changes)

Item 4 - Request from Parties and Agents not to receive notification of validation failures

Remove functionality that blocks the system from sending Notification Feedback Reports (I009 & I010) for participants. Namely:

1. The Redirection Function has to be modified to disallow Non Delivery against these flow types;
2. The Maintain Authorisation screens "Reporting Requirements" screens have to be modified to stop the "No Report" option for these flows.

Details of Work:

1. Modify the SGI redirection screen such that users cannot set the E0091 or E0101 flows as "Non Delivery" against any participant.
2. Remove any existing "Non Delivery" entries against the E0091 and E0101 flows from the redirection tables.
3. Modify the "Reporting Requirements" screen, under the Maintain ECNVA Authorisation and Maintain MVRNA Authorisation screens, so that users cannot specify the "No Report" option for Rejection Feedback Reports (I009 & I010).

Documentation Changes:

1. ECVAA URS, SS and DS (change to reporting options)

Item 5A - Refusal to Be Based on Overall Net Position

Modify the Notification Loader modules so that, for those Party's in Level 2 Credit Default, they calculate the Net impact on the Party's Energy Indebtedness of each Notification.

The current 'Refusal' decision functionality to be replaced by a new function.

The new function will approximate the Net impact based on the Net impact first day or so of the Notification (after taking into account the impact of Gate Closure). For MVRNs it will approximate BMU and FPN data where insufficient data exists. Where a new Notification overwrites an existing Notification then the Net impact will be based on the Net change resulting from the overwrite.

The following rules determine how much data the new function uses to approximate the new Notifications impact:

1. Where the Notification is Single-Day and its EFD > arrival-date then: Use entire Notification.
2. Where the Notification is Single-Day and its EFD = arrival-date then: Use SP data for SPs > relevant Gate Closure SP.
3. Where the Notification is Multi-Day and its EFD > arrival-date then: Use only the first effective day's data.
4. Where the Notification is Multi-Day and its EFD ≤ arrival-date and ETD > arrival-date then: Use the SP data for SPs > relevant Gate Closure SP on arrival-date and the first effective day's data.
5. Where the Notification is Multi-Day and its ETD = arrival-date then: Treat as Single-Day whose EFD = arrival-date.

Approximation of BMU data will be done by taking the most recent valid BMU data prior to the required date.

Approximation of FPN data will be done by taking the most recent valid FPN data prior to the required date for the same week day, matching Settlement Periods. Where the week day is a Bank Holiday then it will be considered to be a Sunday for the purposes of this process.

Note: The way that 'Refusal' is carried out once the decision has been made will remain unchanged.

Details of Work:

1. Change the business loader modules (ene_E0041_001_pb & enm_E0051_001_pb) replacing the existing 'Refusal' decision functionality with a new function.

Documentation Changes:

1. ECVAA URS, SS and DS (changes to 'Refusal' decision function)

Item 5B – All Periods to be Rejected if Any One Period is Rejected

Design Note

For the purposes of this assessment it has been assumed that the rejection of a Settlement Period will result in the rejection of all data associated with that Settlement Period's associated Notification ID. This assumption is made because the alternative, that only data against the associated Notification file submission is rejected, would be excessively expensive to implement. In particular:

1. Rejecting only those elements of an overwrite Notification that were not NULL (i.e. specified the existing position should be kept) would mean having to store Notification data with references against their source file for each Settlement Period, for each effective date range associated against a Notification ID. This is large increase in the complexity of Notification data.
2. It would be a very complex and risky to migrate historical data (Notification data loaded prior to this Mod becoming effective) into a form that would allow this alternative processing to occur.

Modify the Credit Check module so that its behaviour in cases where Notification data for a Settlement Period is rejected is that all data associated with that Notification ID is rejected (for post Gate Closure SPs) rather than just that single Settlement Period.

Rejected Notification data will be recorded as such in the database for the purposes of auditing.

All related DB tables will be updated to reflect this change to the Notification data.

The Notification Feedback report will be need to be modified to allow it to report whole Notifications as these may now consist of multiple SP profiles for different effective date ranges.

Details of Work:

1. Change Credit Check behaviour on detection of a reject SP item.
2. Change Notification Feedback report so that it can report full details of all the Notification data that is rejected.
3. Change the Database to handle the additional storage requirements.

Documentation Changes:

1. IDD Part 1 Spreadsheet & Doc (changes to Notification Feedback report)
2. ECVAA URS, SS and DS (changes to Credit Check and Notification Feedback report)

Item 5C – Rejecting and Refusing on the Basis of Zeroes

Rewrite VNNR functionality so that it no longer works by submitting an all zero Notification.

Details of Work:

1. Change VNNR functionality so that it impacts the database tables directly rather than through a submitted file. Make use of existing Notification Loader to simulate where a null notification (under current system) is submitted.

Documentation Changes:

1. ECVAAS and DS (changes to VNNR workings)

Deviation from ELEXON's Solution / Requirements

None

Operational Solution and Impact

In order to replicate the original behaviour and nullify the resultant new evergreen Notification that is now present, a further evergreen Notification with 0 volumes for all Settlement Periods having Effective From Date of X+1 would also need to be submitted.

Testing Strategy

Unit	X	Change Specific	X	End to End	
Module	X	Operational Acceptance	X	Participant Testing	
System	X	Performance		Parallel Running	
Regression	X	Volume		Deployment/ Backout	X

Other:

In addition to the usual set of unit, integration, system testing and operational acceptance testing, it is expected that for a change of this magnitude to the trading rules, a period of market testing on the PTE would be undertaken. (This has not been accounted for in this impact assessment.)

System Testing Assumptions:

- 1) Regression testing will involve tests RT-01, RT-07 for data setup plus RT-08, RT-09, RT-39.
- 2) Updates to the following existing regression tests are required: RT-09, RT-36, RT-39.
- 3) Change-specific testing will be based on and supercede the existing regression tests FAT-01 (EC & MV), and RT-37 (but also including Participant Termination functionality).
- 4) The following existing regression tests are NOT thought to need updating: R2T-17, PT-09B, R4T-10.
- 5) No BMRA, SAA, CDCA or CRA testing (either Regression or Change-specific) is required.
- 6) Estimates include limited day boundary/GMT/BST/clock change testing, but NO testing using live data.

Validated Assumptions**Item 1 - Effect of an overwrite notification on Settlement Days beyond its Effective To Date**

Questions and assumptions:

1. Required System functionality assumed to be as described in TAI 2254 dated 16/01/07 with all the associated impact on the system areas described in that assessment.
2. It is assumed that the solution for this TAI is in line with the legal text, and if necessary that the legal text will be amended to remove any further ambiguity.
3. It is further assumed that any other supporting documentation will be changed to support the final legal text and supporting LogicaCMG mastered documentation.

Item 2 - Part day overwrites of notifications

Questions and assumptions:

1. Required System functionality assumed to be as described in TAI 2254 dated 16/01/07 with all the associated impact on the system areas described in that assessment.
2. It is assumed that the solution for this TAI is in line with the legal text, and if necessary that the legal text will be amended to remove any further ambiguity.
3. It is further assumed that any other supporting documentation will be changed to support the final legal text and supporting LogicaCMG mastered documentation.
4. In cases where there is a resubmission of a Notification then the values supplied by the Party to the ECVAAs will be the final expected position rather than the values contained in the Notification associated with the resubmission.

Item 3 - Validation at Settlement Period Level

According to ELEXON's interpretation of paragraphs P2.3.4 and P3.3.4 of the BSC, the following validation checks should be performed at a Settlement Period level i.e. data for those Settlement Periods passing the validation check should be accepted as valid (and used in settlement), even if data for other Settlement Period(s) within the notification is invalid:

- For MWh values (in ECVNs and MVRNs), the check that the value has no more than three digits after the decimal point, and is within the range $\pm 99,999.999$ MWh.
- For percentage values (in MVRNs), the check that the percentage has no more than five digits after the decimal point and is in the range 0 to 100 (inclusive).

However, the ECVAAs system doesn't do this. As agreed with ELEXON staff during the implementation of P98, an ECVN or MVRN is treated as invalid in its entirety if a single Settlement Period value fails the above check. Logica is requested to assess the impact of bringing ECVAAs in line with the BSC in this respect.

Questions and assumptions:

1. Where one or more values exceed the range $\pm 99,999.999$ MWh in an ECVN or an MVRN, an alternative Null will be inserted into the Notification as a replacement.

2. Where one or more percentage values has more than five digits after the decimal point or is not in the range 0 to 100 (inclusive) in an MVRN, an alternative Null will be inserted into the Notification as a replacement.
3. It is assumed that the impact of a Null will be that described in the solution to TAI2254. That is: Where the Notification is new and therefore there is no previous Notification with valid data for the period being assessed, a Null value will represent no notification for the period. Where there is a previous Notification the inserted Null will be interpreted to represent that the value from the previous notification should be used.
4. For MVRNs where either the MWh value or the percentage value fails this validation then the Settlement Period will be rejected.
5. In cases where all defined values individually fail validation and the resulting Notification contains only Null values, then the entire Notification will be considered to have been rejected and will be reported as such.
6. Where the invalid figure falls with a period which is duplicated or dropped because of a clock change, the logic as detailed in 1 or 2 above will be implemented prior to the impact of the clock change.
7. Reporting of rejected Settlement Period data will be done through the Feedback reports (I009 & I010). The value of the rejected value will not be reported back, simply the fact that the data for that Settlement Period was rejected. The flow definitions will be modified to reflect this.
8. In cases where Acceptance Feedback is sent for a Notification which has had one or more Settlement Periods rejected then a value of Null will be reported against rejected Settlement Periods.
9. None of the other validation steps taken when validating an incoming file are changed.

Item 4 - Request from Parties and Agents not to receive notification of validation failures

Questions and assumptions:

1. The system will be changed so that no Party or Agent can opt out of reporting of validation Failures.
2. BSCP 41 will be changed to specifically exclude Notification Validation reports from 41/1 Part B
3. BSCP 71 will be modified such the Notification Validation reporting options will be removed.

Item 5A - Refusal to Be Based on Overall Net Position

Section P contains provisions for 'refusing' an ECVN or MVRN at the point it is received, if it increases Energy Indebtedness for a Party in Level 2 Credit Default. Currently, the ECVA system will refuse a notification in its entirety if any one of the Settlement Period values within it increases indebtedness.

The following assumptions apply only to Parties in level 2 Credit Default and are derived out of the desire to try and limit the performance impact of impact of increased processing load on the Notification Loaders for individual Notification loads. Note that the term 'today' used below refers to the day on which the Notification arrived, not necessarily on the same day on which it is processed:

1. When considering the impact of a Notification on a Party's Energy Indebtedness only data for those Settlement Periods which have not yet passed Gate Closure will be considered.
2. For multi-day Notifications whose EFD on or before today and ETD after tomorrow: These Notifications will be processed by approximating their overall impact based on the net impact of today and tomorrow only; – i.e. where the combined net impact of today and tomorrow is an increase in Energy Indebtedness then the whole Notification will be considered to increase the Energy Indebtedness and consequently it will be refused.
3. For Notifications whose EFD after today: These Notifications will be processed by approximating their overall impact based on the impact of their first effective day – i.e. where the net impact of the first effective day is an increase in Energy Indebtedness then the whole Notification will be considered to increase the Energy Indebtedness and consequently it will be refused.
4. For MVRNs: Where insufficient BMU data is available for the loader to carry out its processing it will make use of the most recent available data (based on effective dates) to approximate a result.
5. For MVRNs relating to Interconnector BMUs: Where insufficient FPN data exists to allow the loader to carry out its processing it will make use of the most recent available data to approximate a result. The most appropriate data will be considered to be data for the most recent same day; e.g. a Monday will be mapped to most recent Monday for which FPN data exists for the BMU in question. Public Holidays are treated as a special case and are mapped to a Sunday – This is consistent with the current CDCA mapping used for profiling. In the case where no appropriate FPN data exists then a defined default value will be used - (Assumed to be Zero).
6. In the case of an overwrite Notification, the above applies, but in addition, the net impact is taken to be the difference between the current position and the post overwrite position. If this difference is a reduction of the Parties energy indebtedness then the net impact is considered to be a negative one and the Notification will be accepted. Null Settlement Periods will be considered to have zero Net impact.

Item 5B – All Periods to be Rejected if Any One Period is Rejected

Section P contains provisions for '**rejecting**' components of an ECVN or MVRN that increase Energy Indebtedness for a Party in Level 2 Credit Default for Settlement Periods within the Credit Default Rejection Period. Currently, the ECVA system applies this check on a Settlement Period by Settlement Period basis, as Gate Closure is reached. However, P210 identifies another interpretation of P2.5 and P3.5: that the system should be "rejecting an entire notification if one Settlement Period has the effect of increasing indebtedness".

We feel it should be noted that item 5B negates the impact of 5A in that where a Notification is not refused because it has a Net effect of reducing the party's Energy Indebtedness it might then be rejected because a single Settlement Period's data increases the party's Energy

Indebtedness.

1. As per the current implementation, and in line with the BSC, the Credit Check process will base its decision to reject an entire Notification based on the impact on the Party's Energy Indebtedness of the Settlement Period which is: Gate Closure + 3.
2. Where a Settlement Period component relating to a particular Notification ID increases the Energy Indebtedness of a Party in Level 2 Credit Default then all data associated with that Notification ID will be rejected. Where one or more overwrites have been received for the Notification ID then these subsequent submissions, along with the first submission, will be rejected for all dates. (this is in contradiction of Item 1)

Note that when an overwrite is processed for an existing Notification it will update the current view of that Notification as a whole. There is no link to a period notification and its submission file and it is therefore not possible to the credit check to reject all notifications received via a specific file. The term 'for all dates' is therefore all unperformed period notifications for the Notification Reference.

3. Only those Settlement Periods that have not already been fully processed (i.e. only those SPs that impact the current and future Gate Closures) will be rejected. In affect the Notification will be set to zero for the current and future Settlement Periods.
4. The Notification Feedback Reports (I009 & I010) will be modified to allow handling of whole Notification rejection.

Item 5C – Rejecting and Refusing on the Basis of Zeroes

Currently, the ECVA system will refuse (functions F005 & F006) or reject (function F007) if the notification "increases" Energy Indebtedness. However the BSC refers to "not decreasing" rather than "increasing". Therefore the tests for refusal and rejection (as modified by items 5A and 5B above) need to refuse or reject if the increase in Energy Indebtedness is greater than **or equal to** zero (not greater than, as currently).

Questions and assumptions:

1. The VNNR functionality will be modified so as no longer use the submission of null notifications in order to effect nullification.
2. The termination of a Party's BP role will continue to result in the termination of the effective date range of all relevant, associated Notifications.

Item 6 - An erroneous cross reference

No assumptions or questions.

Outstanding Issues

None

Changes to Service							
Services Impacted							
	BMRA	CDCA	CRA	ECVAA	SAA	TAA	Other
Software				X			
IDD Part 1 (Docs)				X			
IDD Part 1 (S'Sheet)				X			
IDD Part 2 (Docs)							
IDD Part 2 (S'Sheet)				X			
URS				X			
SS				X			
DS				X			
MSS				X			
OSM				X			
LWIs				X			
RTP	None						
Comms	None						
Other	None						
Nature of Documentation Changes							
Please see LogicaCMG's Proposed Solution.							
Nature / Size of System Changes							
Large.							
Deployment Issues, e.g. Outage Requirements:				Outage requirements – required for ECVAA.			
Impact on Service Levels:				None			
Impact on System Performance:				There will be an impact, this has not been fully quantified in this assessment.			
Responsibilities of ELEXON							
Within reasonable levels, ELEXON will make available appropriate staff to assist LogicaCMG during the development of this change.							
Acceptance Criteria							
This is covered by the acceptance criterion 2 in the "CVA Program – Release Acceptance Criteria" document for the Feb03 Release.							

Any Other Information

Indicative Plan

ID	Task Name	21 April		11 June		01 August		21 September		11 November		01 January		21 February		11 April					
		W-4	W-1	W3	W6	W9	W12	W15	W18	W21	W24	W27	W30	W33	W36	W39	W42	W45	W48	W51	
1	Project Plan Template																				
2	Project Start																				
3	Design Support																				
6	Design																				
11	Development																				
13	Test Specification																				
16	Build #1 Creation and Installation																				
18	Dry Run Testing																				
20	Build #2 Creation and Installation																				
22	Main Run Testing																				
25	Participant Testing																				
27	Operational Acceptance Testing																				
29	Deployment																				

Attachments

TAI2254 Price Presentation v0.2.xls