

DSC Change Proposal Document

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 Xoserve to fill out all of the information in the sections coloured ■

A1: General Details





Change Reference:	XRN 5072		
Change Title:	Application and derivation of TTZ indicator and calculation of volume and energy – all classes		
Date Raised:	22/01/2020		
Sponsor Representative Details:	Organisation :	Xoserve	
	Name:	Nicky Kingham/Karen Marklew	
	Email:	Nicky.Kingham@xoserve.com , Karen.J.Marklew@xopserve.com	
	Telephone:	01212292473, 01212292599	
Xoserve Representative Details:	Name:	Emma Smith	
	Email:	Emma.Smith@xoserve.com	
	Telephone:	01212292194	
	Business Owner:		
Change Status:	<input type="checkbox"/> Proposal	<input type="checkbox"/> With DSG	<input type="checkbox"/> Out for Review
	<input type="checkbox"/> Voting	<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Rejected

A2: Impacted Parties

Customer Class(es):	<input type="checkbox"/> Shipper	<input type="checkbox"/> Distribution Network Operator
	<input type="checkbox"/> NG Transmission	<input type="checkbox"/> IGT
	<input type="checkbox"/> All	<input checked="" type="checkbox"/> Other [This change proposal will consider all classes and all asset combinations]
Justification for Customer Class(es) selection		

A3: Proposer Requirements / Final (redlined) Change

<p>Problem Statement:</p>	<ol style="list-style-type: none"> 1. This proposal is required to amend the logic to how the system derives the Round the Clock (RTC) or Through The Zero (TTZ) count, in the absence of a value being provided in RGMA flows. 2. To ensure the correct application of a provided TTZ indicator and the calculation of volume and energy. This should include, but not restricted to actual read following estimated read(s), Replacement read, Inserted reads and site visit reads.
<p>Change Description:</p>	<ol style="list-style-type: none"> 1. Where there is a Class 4 site with AMR/DRE installed, check to check reconciliation is carried out when Site Visit Reads are received. When an RGMA update is received (ONJOB or ONUPD) these reads are treated as Site Visit Reads. When an ONUPD (asset update) is submitted the shipper does not have to supply any meter reads or Round the Clock (RTC) count or TTZ count (Through The Zeros) so Xoserve will generate estimated reads and derive a RTC if required. If the shipper is submitting an RGMA flow (ONJOB) and where the RTC is not supplied, the system will derive a RTC count. When the system looks to derive the RTC count it will be based on the Read history (last Actual read, last Check Read, AMR/DRE Installation read, Meter Install read, etc) For Project Nexus the RGMA design was taken from legacy CA Rules. The RGMA logic was considered as an 'As Is' process and the requirements were not changed. Under source rule 100278 it states "If the RTC is not provided, the RTC would be derived with an increment. We have seen instances where an RTC count of 1 is incorrect, as previous read history shows that the meter has gone round the clock several times. This has generated a reduced volume and energy, so has caused the AQ value to be understated and incorrect Reconciliation. This understated AQ affects all downstream processes that use the AQ value, (EUC assignment, daily allocation and the calculation of unidentified Gas). 2. The change is requesting analysis of all permutations of read, TTZ (through the zero) and volume scenarios to identify those scenarios where the current system rules are being correctly applied and those scenarios where they are being incorrectly applied or are not consistent with the defined rules. Other defects and CRs have been raised to fix and address some of these issues but each have tackled only a small part of the problem, not the holistic issue / root cause. The impact of this issue includes erroneous AQ calculations, impacting UIG and billing. The CR is requesting analysis initially to identify all issues but solution options for all scenarios should be provided. Profiling should be completed for all scenarios identified and, where possible, workarounds identified as part of the

	<p>analysis to remove or reduce the impact to customers before the enduring solution is implemented.</p> <p>Since Nexus implementation there have been a number of scenario specific defects raised concerning the use of the TTZ indicator provided in the Meter Reading files and how the subsequent volume and energy is then being calculated. The TTZ indicator confirms whether the meter readings provided have clocked (gone through the zeros) since the last actual read and the means to derive consumption. However, through the defects raised and analysis of these issues, inconsistencies and errors in the use of TTZ and derivation of consumption have been seen.</p> <p>Previous defects which have addressed aspects of the issue are: Defect ID 87, 463, 933, 1052, 1341, 1349. Current known live defects occurring as a result of these issues are: 1238, 1501 and 1495. Given the ongoing nature of the issues and the lack of a full RCA, additional defects are expected to be raised.</p> <p>The attached documents provide a view of the complexity and the number of scenarios already identified and, in some cases already tested. These scenarios have been identified during analysis of the previous and current defects by functional and technical SME's. These scenarios are not exhaustive and other scenarios are expected to be identified. The scenarios attached should also be validated as part of this analysis.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  Defect%201341%20HPQC%20scenario% </div> <div style="text-align: center;">  Defect%201349%20testing%20scenario: </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 10px;"> <div style="text-align: center;">  BUG_1052_Shipper%20transfer%20estii </div> <div style="text-align: center;">  Defect%201238%20scenarios.docx </div> </div> <p>In analysis of the data profiling, where historic volume/energy calculations are found to be incorrect as a result of how the RTC/TTZ indicator has been utilised these will require correction in line with the solutions applied. As AQ calculations consider the volume/energy for up to 3 years without underlying data correction they will continue to be, potentially, incorrect.</p>	
Proposed Release:	November 2020	
Proposed Consultation Period:	<input type="checkbox"/> 10 Working Days	<input type="checkbox"/> 15 Working Days
	<input type="checkbox"/> 20 Working Days	<input checked="" type="checkbox"/> Other [Specify here]

A4: Benefits and Justification

Benefit Description:	The benefits for this change, will be that the volume/energy and Reconciliation will be correct. The AQ process will use the correct energy to calculate the AQ. This will ensure that all down stream process that use the AQ value for example EUC assignment, Daily Gas Allocation and the calculation of Unidentified Gas all be accurate. <i>What, if any, are the tangible benefits of introducing this change? What, if any, are the intangible benefits of introducing this change?</i>
Benefit Realisation:	The benefits will be immediate upon implementation <i>When are the benefits of the change likely to be realised?</i>
Benefit Dependencies:	None at this time <i>Please detail any dependencies that would be outside the scope of the change, this could be reliance on another delivery, reliance on some other event that the projects has not got direct control of.</i>

A5: Final Delivery Sub-Group (DSG) Recommendations – Removed

(see Section C for DSG recommendations)

A6: Service Lines and Funding

Service Line(s) Impacted - New or existing	Service Area 3: Record, submit data in compliance with UNC		
Level of Impact	Major/ Minor/ Unclear/ None		
If None please give justification			
Impacts on UK Link Manual/ Data Permissions Matrix			
Level of Impact	Major/ Minor/ Unclear/ None		
If None please give justification			
Funding Classes :	Customer Classes/ Funding	Delivery of Change	On-going Budget Amendment
	<input checked="" type="checkbox"/> Shipper	100 %	100 %
	<input type="checkbox"/> National Grid Transmission	XX %	XX %
	<input type="checkbox"/> Distribution Network Operator	XX %	XX %
	<input type="checkbox"/> IGT	XX %	XX %
	<input type="checkbox"/> Other <please specify>	XX %	XX %
ROM or funding details:			

Funding Comments:	
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A7: ChMC Recommendation – Initial Review

Change Status:	<input checked="" type="checkbox"/> Approve	<input type="checkbox"/> Reject	<input type="checkbox"/> Defer
DSC Consultation Issue:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

A8: ChMC Recommendation – Solution Review

Change Status:	<input checked="" type="checkbox"/> Approve	<input type="checkbox"/> Reject	<input type="checkbox"/> Defer
Industry Consultation:	<input checked="" type="checkbox"/> 14 Working Days	<input type="checkbox"/> 15 Working Days	
	<input type="checkbox"/> 20 Working Days	<input type="checkbox"/> Other [Specify Here]	
DSC Consultation Issue:	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Date Issued:	14/12/2020		
Comms Ref(s):	2741.4 – RT - JR		
Number of Responses:	2 approval responses.		
Solution Voting:	<input checked="" type="checkbox"/> Shipper	Approved	
	<input type="checkbox"/> National Grid Transmission	Please select.	
	<input type="checkbox"/> Distribution Network Operator	Please select.	
	<input type="checkbox"/> IGT	Please select.	
Meeting Date:	13/01/2021		
Release Date:	Release: November 2021		

A8: ChMC Recommendation – Detailed Design

Change Status:	<input checked="" type="checkbox"/> Approve	<input type="checkbox"/> Reject	<input type="checkbox"/> Defer
Industry Consultation:	<input checked="" type="checkbox"/> 10 Working Days	<input type="checkbox"/> 15 Working Days	
	<input type="checkbox"/> 20 Working Days	<input type="checkbox"/> Other [Specify Here]	
DSC Consultation Issue:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Date Issued:	15/03/2021		
Comms Ref(s):	2788.3 - MT - PO		
Number of Responses:	No responses received		
Solution Voting:	<input checked="" type="checkbox"/> Shipper	Approve	
	<input type="checkbox"/> National Grid Transmission	Please select.	

	<input type="checkbox"/> Distribution Network Operator	Please select.
	<input type="checkbox"/> IGT	Please select.
Meeting Date:	07/04/2021	
Release Date:	Release: November 21	

Section C: DSG Discussion

C1: Delivery Sub-Group (DSG) Recommendations

DSG Date:	14/12/2020
DSG Summary:	<p>JB presented this agenda item highlighting that Xoserve are planning to remove a requirement from the change.</p> <p>Current functionality involves where a JOB file is received with a read but without a related TTZ value, Xoserve estimate the TTZ and provide it back to the shipper in the N95 record within the DRS file.</p> <p>Where there is no AMR equipment present on site, the TTZ estimate is based on the previous valid actual read. The estimation logic for the above was taken from legacy (pre Nexus) and as such, if deemed to be required, the TTZ will be estimated as 1. This logic can result in under estimation of volume in some cases however, in the majority of cases this logic returns an accurate result in volume calculation.</p> <p>JB stated that the impact assessment was not able to identify any logic that would meet the following requirement</p> <ul style="list-style-type: none"> Identify if a meter may have clocked over more than once since the last Check Read <p>On review of this requirement it was felt that by seeking to change the existing logic additional risk may be introduced into what is already a complex area of functionality.</p> <p>JB encouraged Shippers to provide the TTZ value within a JOB file at all times, particularly where the meter has clocked over multiple times.</p> <p>DSG Discussion:</p>

	<p>EL asked a question around the current estimation being 1 if an estimation is deemed to be necessary and not trying to work out how many times it has been clocked. EL stated if that is the current process, then does this Change need to be progressed if its already being done. JB clarified that there are two parts to this Change and the first part is regarding RGMA estimation and the second would be that standard use of TTZ in normal read submissions. Therefore, it is not being withdrawn and focus' on the items mentioned.</p> <p>PO stated the requirements that are being taken forward can be found within the HLSO.</p> <p>JB presented the HLSO for this change and provided a background of the change which can be found in the slide deck.</p> <p>JB explained there is one solution to this Change.</p> <p>Solution Option: Amend the TTZ derivation logic for all read and RGMA interfaces</p> <p>There is one solution option, Amend the TTZ derivation logic for all read and RGMA interfaces. JB added that this was raised by Xserve to complete a review of and make improvements to volume calculations that involve TTZ counts as inconsistent use of the TTZ in volume calculations can lead to downstream issues in AQ calculation and UIG.</p> <p>Sean McSweeney asked if a Shipper sends a read through with a TTZ of 1 and Xserve estimate it as 2, what would happen if this was supposed to be 1. JB asked if SMC was suggesting, in the scenario, that we thought the TTZ should be 2 when supplied as 1. JB confirmed the example scenario is where the previous read(s) would have been estimated with a TTZ of 1 and when the next shipper read is submitted with a TTZ of 1 validation is completed against the previous actual read the consumption calculation completed from the previous estimate. In this scenario the TTZ supplied by the system user should be ignored in the consumption calculation to ensure accuracy. JB stated there is a CSS code conflict with this solution. This is being investigated to understand the impacts to the CSS code and how this will be mitigated.</p>		
Capture Document / Requirements:	<Insert where appropriate>		
DSG Recommendation:	<input type="checkbox"/> Approve	<input type="checkbox"/> Reject	<input type="checkbox"/> Defer
DSG Recommended Release:	Release: Feb / Jun / Nov XX or Adhoc DD/MM/YYYY		

DSG Date:	24/05/2021		
DSG Summary:	<p>MN presented this agenda item. MN stated that when there is an Inserted Check Read, there is a subsequent read already present, then the volume calculation would need to be changed to ensure the come between the inserted Check Read and the later read is correct. MN added that in regard to Check to Check calculations ,triggered by an SFN read, with an estimated Transfer or Class change reading, this will need to be updated. This is due to the validation being conducted against the previous Check read however the volume can be calculated from that estimated Transfer or Class Change read.</p> <p>MN explained the logic for determining the TTZ to use for calculating the Check to Check volume, from the SFN read to the estimated Transfer or Class change read, will be updated as follows: TTZ of the Current Check Read minus the SUM of all TTZs between the previous Check Read and, up to and including, the estimated Transfer or Class Change read (for clarity, this includes the TTZ on the estimated Transfer or Class change read but excludes the TTZ on the previous Check Read) Any reads present after the estimated Transfer or Class change read are not included in the calculation. This can be viewed in the slide deck and has been illustrated as text as well as with an example diagram. SM stated this is very helpful and beneficial information to understand the change and the sum that is used to derive the Check to Check TTZ.</p>		
Capture Document / Requirements:	<Insert where appropriate>		
DSG Recommendation:	<input type="checkbox"/> Approve	<input type="checkbox"/> Reject	<input type="checkbox"/> Defer
DSG Recommended Release:	Release: Feb / Jun / Nov XX or Adhoc DD/MM/YYYY		

Section D: High Level Solution Options

D1: Solution Options

Solution Option Summary:	<p><u>Overview</u> XRN5072 “Application and derivation of TTZ indicator and calculation of volume and energy – all classes” seeks to ensure that the derivation and utilisation of the Through The Zeros (TTZ) value is consistent across reads of all types, for all classes regardless of order of read receipt/creation and results in accurate volume calculations which are then used in downstream processes i.e. AQ calculation.</p> <p>The Change Proposal can be found here</p> <p><u>Change/Solution Overview</u> Since Nexus implementation, there have been a number of scenario specific defects raised concerning the use of the TTZ</p>
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	<p>indicator provided in Meter Reading files and how the subsequent volume and energy is then being calculated. The TTZ indicator confirms whether the meter readings provided have clocked (gone through the zeros) since the last actual read. However, through the defects raised and analysis of these issues, inconsistencies and errors in the use of TTZ and, therefore, the calculation of consumption have been seen.</p> <p>As a result of the inconsistent use of the TTZ and subsequent inaccurate volume calculation, AQ calculations are, therefore, adversely impacted resulting in potentially inaccurate EUC assignment, Daily Gas Allocation and Unidentified Gas.</p> <p>The High Level Solution Option (HLSO) document for this change is now available and can be found here for your review.</p> <p>The HLSO outlines that Xserve have identified one solution option to deliver the requirements of the change.</p> <p>Solution Option 1: This solution is to derive and implement an enhanced formula to assess the TTZ and ensure the value is applied within the volume calculation correctly based on the historic read activity for the MPRN in question.</p> <p>A review of all volume calculations that involved a TTZ, since Nexus go live or Line in the Sand (LIS), whichever is later, will also be completed to identify any inaccurate calculations and seek to address them.</p>
Implementation Date Solution Options:	The proposed solution will require delivery within a Major Release, aiming for November 2021, subject to ChMC approval.
Xserve preferred option: (including rationale)	Xserve believe the proposed option will meet the requirement of the change by ensuring that volume calculations correctly utilise the TTZ based on the existing read history and consistent and accurate across Supply Meter point Class and read type.
DSG preferred solution option: (including rationale)	The proposed solution, along with a run-through of the HLSO, will be presented to DSG on 14 th December 2020.
Consultation closeout:	05/01/2021

Impact on Service Line(s) and funding (A6) for each Solution Option:	(If differ from original assessment in A6)
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Section E: Industry Response

Solution Options Review

E1: Organisation's preferred solution option

User Contact Details:	Organisation:	EDF
	Name:	Eleanor Laurence
	Email:	eleanor.laurence@edfenergy.com
	Telephone:	07875117771
Organisation's preferred solution option, including rationale taking into account costs, risks, resource etc.	Approve given option with the caveat that we would like to input into detailed design	
Implementation Date:	Approve	
Xoserve preferred solution option:	Approve	
DSG preferred solution option:	Approve	
Publication of consultation response:	N/A	

E2: Xoserve's Response

Xoserve Response to Organisations Comments:	Thank you for your representation, we will feed this into ChMC for a final decision
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E1: Organisation's preferred solution option

User Contact Details:	Organisation:	SSE Energy Supply Ltd
	Name:	Megan Coventry
	Email:	megan.coventry@sse.com
	Telephone:	02392277738
Organisation's preferred solution option, including rationale taking into account costs, risks, resource etc.	We agree that the proposed review of volume calculations involving a TTZ to address inaccurate calculations post Nexus go-live/LIS will improve understanding and accuracy in the use of the TTZ going forward. It would be useful for a report to be published to DSC Change Management committee/industry stakeholders detailing the investigation and outcome of this review into TTZ and volume calculations. We also request confirmation that it is not the intent of	

	the of XRN5072 to re-invoice shippers on the basis of the review findings?
Implementation Date:	Approve
Xoserve preferred solution option:	Approve
DSG preferred solution option:	Approve
Publication of consultation response:	N/A

E2: Xoserve' s Response

<p>Xoserve Response to Organisations Comments:</p>	<p>Thank you for your response on this change. It is the intention, within the development and deployment of the change, to run a review of historic calculations and discuss findings and impacts with the respective shippers. If it is felt that an overall report would be beneficial then this could be looked at by the project team. I will highlight it to them in order to assess what further steps are required.</p> <p>In reference to the correction of historic consumption. It is a requirement of the change to use consumption adjustments to correct consumption values that are found to be incorrect as a result of the previous incorrect use/derivation of the TTZ value. In line with the above reporting, the CDSP will work with impacted shippers to manage the impact of these consumption adjustments. For clarity on the scenario, commonly where the TTZ history has not been properly accounted for in the volume calculation it is likely that the TTZ will have been double counted and, therefore, the volume over allocated. This may not be true for every scenario and the actual position will not be fully understood until the review is completed during the delivery phase but hopefully gives a view of the likely direction of travel of any adjustments.</p>
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Section F: Approved Solution Option

F1: Approved Solution Option

XRN Reference:	XRN5072 Application and derivation of TTZ indicator and calculation of volume and energy – all classes
Solution Details:	<p>Option 1 - Amend the TTZ derivation logic for all read and RGMA interfaces</p> <p>The solution is to amend the logic to determine the accurate TTZ count where one or more readings have been provided, or estimated, with a TTZ value.</p> <p>SAP ISU : Amend the TTZ derivation logic in the UMR, UBR, UDR, DLC, Site Visit & RGMA interface Enhance the Consumption Adjustment tool Identify consumption periods previously calculated with an inaccurate TTZ Apply Consumption adjustments to any impacted period identified</p>
Implementation Date:	05/11/2021
Approved By:	Change Management Committee
Date of Approval:	13/01/2021

Section G: Change Pack

G1: Communication Detail

Comm Reference:	2788.3 - MT - PO
Comm Title:	XRN5072 Application and derivation of TTZ indicator and calculation of volume and energy – all classes Detailed Design Change Pack
Comm Date:	15/03/2021

G2: Change Representation

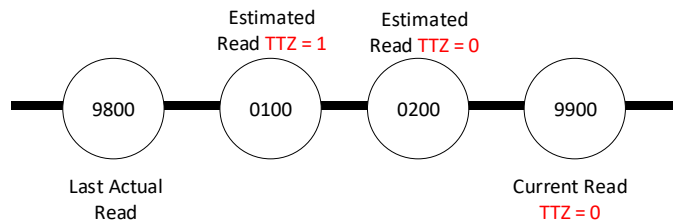
Action Required:	For representation
Close Out Date:	29/03/2021

G3: Change Detail

Xoserve Reference Number:	XRN5072
Change Class:	Functional System
ChMC Constituency Impacted:	Shipper Class A; Shipper Class B; Shipper Class C
Change Owner:	James Barlow Customer Change Specialist james.barlow@xoserve.com 0121 229 2802
Background and Context:	<p>Since Nexus implementation, there have been a number of scenario specific defects raised concerning the use of the Through The Zero (TTZ)/Round The Clock (RTC) indicator provided in Meter Reading files and how the resultant volume is then being calculated.</p> <p>The TTZ indicator is used for meter read validation to confirm whether the meter readings provided have clocked (gone Through The Zeros) since the last actual read. Due to the inconsistent use of the TTZ and subsequent inaccurate volume calculation several processes are impacted including , reconciliation, capacity charges, rolling AQ and FYAQ calculations. This can result in potentially inaccurate EUC assignment, Daily Gas Allocation and Unidentified Gas.</p> <p>For context, example scenarios have been provided below. Please note, there are multiple permutations of these examples taking into account variables such as Supply Meter Point (SMP) Class, read source, read order, number of estimated reads and existence of later actual, or estimated, reads.</p> <p>Examples provided are for illustrative purposes only.</p>

Example 1

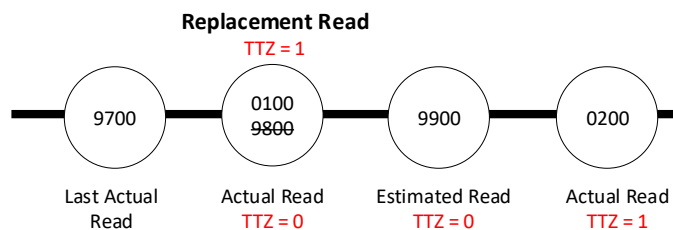
An actual read is provided with a TTZ value of zero following two estimated reads where one of these reads has a TTZ of 1.



In this scenario the provided, current, read has a TTZ value of zero. When calculating the volume between actual reads the TTZ of 1 from the 1st estimated read may result in an incorrect volume if not considered correctly.

Example 2

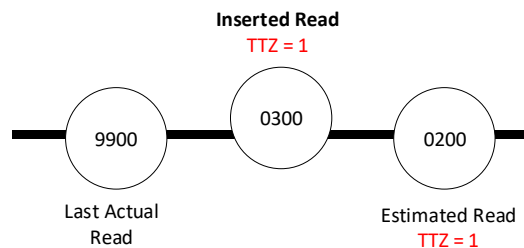
An existing read, with a TTZ of zero, is replaced by a read with a TTZ value of 1. A later estimated read, with a TTZ of 0, and a subsequent actual read, with a TTZ of 1, are present prior to the replacement read being received.



In this scenario, as the replacement read is higher, due to the TTZ value of 1, than the subsequent estimated read, if the TTZ from the estimated read is utilised as is then the forward volume calculation, from replacement to subsequent estimated read, will be incorrect.

Example 3

An actual read is inserted, with a TTZ value of 1, where an estimated read exists for a read date later than the inserted read, also with a TTZ value of 1.



In this scenario, as the TTZ value of both the inserted and subsequent estimated read is 1, as per example 2, if those TTZ values are utilised as is then the forward volume calculation, from inserted read to subsequent estimated read, will be incorrect.

	<p>When raised, the intention of the change was to address all issues in the utilisation of the TTZ in volume calculations regardless of SMP Class. However, during the detailed impact assessment it has been found that there are no issues for Supply Meter Points in Class 1 and Class 2 as better estimates are recalculated, where appropriate, following a valid actual read being loaded.</p> <p>Also, in the original scope of the change, was a requirement to amend the logic utilised in the estimation of the TTZ value where one is not provided within an RGMA transaction. During the initial impact assessment it was found that a change to this logic would likely introduce more risk than it would remove and, therefore, was descoped from the change, with the support of DSG, in December 2020 (meeting papers can be found here). However, please note, the resultant volume calculation remains in scope of the change.</p>
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G4: Change Impact Assessment Dashboard (UK Link)

Functional:	Meter Read Processing (UK Link)
Non-Functional:	None
Application:	SAP ISU
User(s):	Shippers
Documentation:	None
Other:	N/A

Files				
File	Parent Record	Record	Data Attribute	Hierarchy or Format Agreed
None	None	None	None	None

G5: Change Design Description

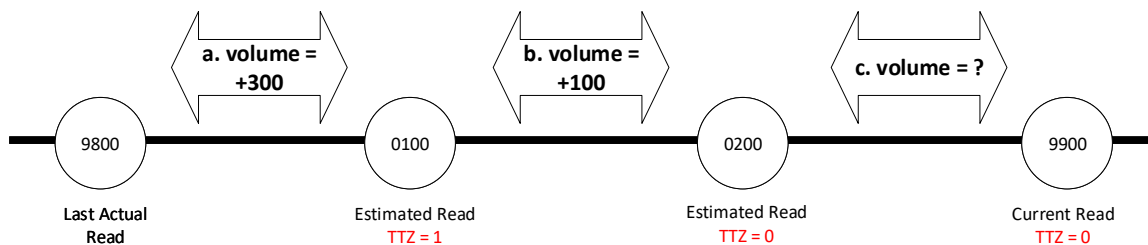
<p>Within the initial Change Pack consultation, a single solution option was proposed, and all representations were in support of this solution which is defined below. This was ratified by Change Managers at the Change Management Committee (ChMC) meeting in January 2021.</p> <p><u>Solution Summary</u></p> <p>This change seeks to utilise the meter read history of a given MPRN to derive the correct TTZ values to use in volume calculations following the receipt of a read with or, in the case of an RGMA read submitted without a TTZ, the generation of, a TTZ not equal to zero.</p> <p>There are a large volume of scenarios to be considered when assessing the read history so the following, using the examples defined in section G3 above, defines the proposed core principles to be used.</p>
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Backward Volume

Where the read immediately prior to the read being processed is not an actual read the logic for determining the TTZ for use in calculating backward volume will be updated as follows:

The TTZ value of the Current Read (CR)
minus
 the sum of the TTZ value of all reads between the last actual read and the CR (excluding the last actual read and the CR)

The following is an example of the new backward volume calculation:



The TTZ used to calculate volume c. is derived by
 TTZ of the CR is **0**

minus
 The SUM of all TTZ values between last actual and the current read (1st estimate is **1**, 2nd estimate is **0**) = **1**
 Therefore, a derived TTZ value of **-1**

The derived TTZ value of **-1** will be applied to the current read for backward volume calculation. As volume is calculated between each read, estimated and actual, the current read must have a negative TTZ value so that volume c. is calculated as **-300** and not as **+9700**.

For clarity, the derived TTZ value used in the volume calculation will not be stored. The read and the associated TTZ received, or generated, will be maintained.

Forward Volume

Where the current read is not the latest read held both backward and forward volume is calculated. Backward volume is calculated as defined above, the logic for determining the TTZ value for use in calculating the forward volume will vary based on the reads already present in UK Link. These variations are defined below.

It should be noted, where the received read is immediately prior to an existing actual read there are no changes required to the existing logic as the TTZ value to be used is already derived correctly.

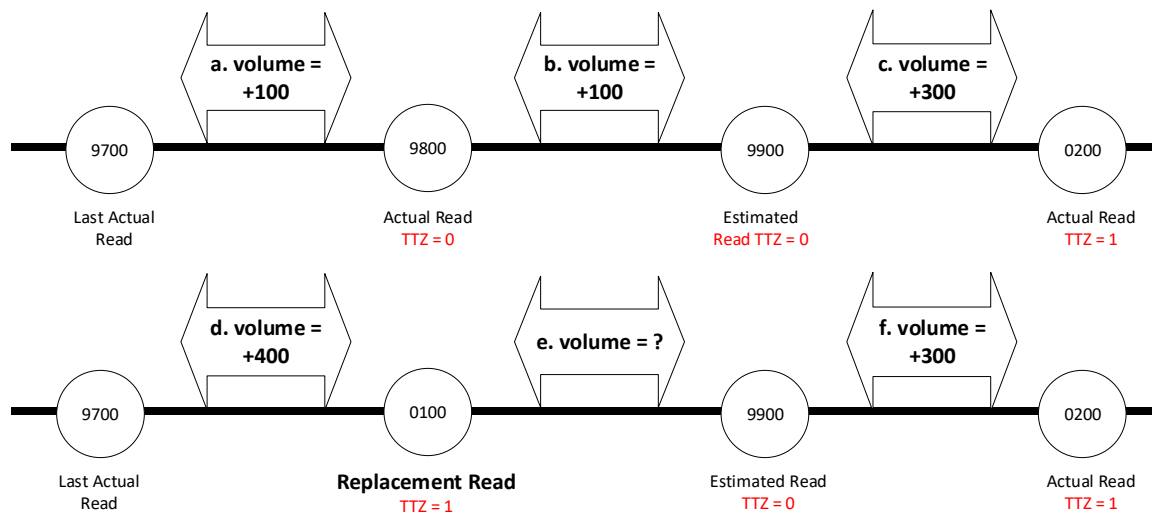
Replacement Reads

In the case of a replacement read, the volume has already been calculated between each of the reads prior to the read being replaced. Following receipt of a valid replacement read, backward volume is calculated using the logic above and the forward volume, from the replacement read to the subsequent read will be calculated as:

The total, original, backward and forward volume
minus

the replacement backward volume (between the replacement and the previous read)

The below is an example of a replacement read scenario:



e. volume is calculated by
 Summing original volume, a. (100) & b. (100) = 200
minus
 New backward volume from d. (400)
 Forward volume, e. = -200

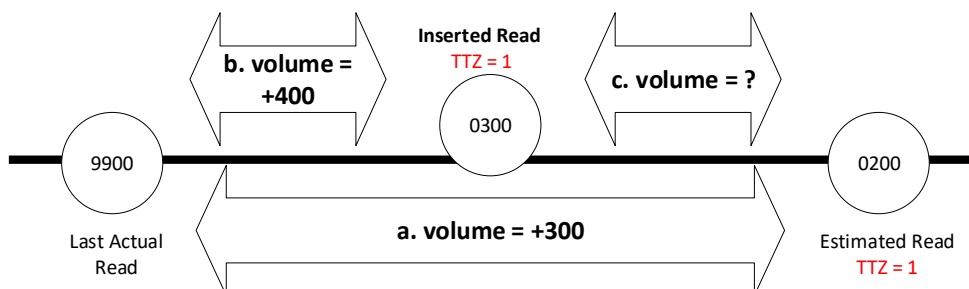
For clarity, the consumption period holding volume c. is not affected by the replacement reading and, therefore, the value persists as f.

Inserted Reads

Where a read is inserted in-between existing reads the backward volume is calculated using the logic above and the forward volume, from the inserted read to the subsequent read, will be calculated, in line with the replacement read scenario previously defined. For context, this will be as follows:

The volume between the original reads
minus
 the new backward volume (between the inserted read and the previous read)

The below is an example of an inserted read scenario:



c. volume is calculated by
 Original volume from volume a. = (300)
minus
 New backward volume, b. = (400)

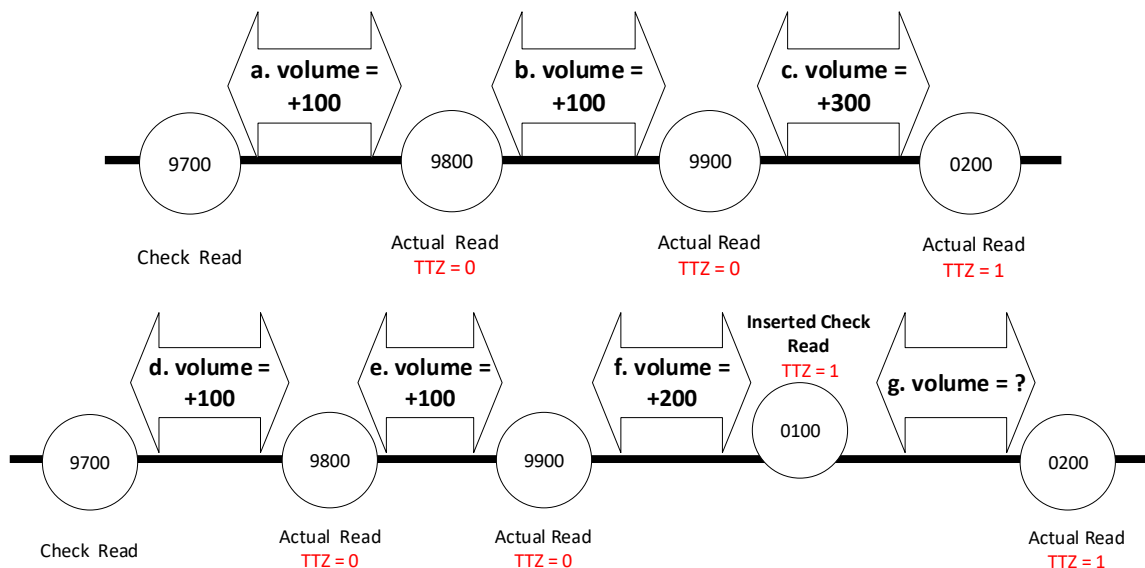
Forward volume, c. = -100

Inserted Check Reads

In the scenario where a check read, that is, a read triggering Check to Check reconciliation, is inserted prior to the latest read, the volume forward from the inserted read to the latest read will be calculated as:

Total volume between previous check read and the latest read
minus
 Volume between the inserted and previous check reads

The below is an example of an inserted check read scenario:



g. volume is calculated by
 Summing volume a. (100), b. (100) & c. (300) = 500
minus
 Volume d. (100), e. (100) & f. (200) = 400
 Therefore volume g. = 100

There is no change to the backward check to check volume calculation logic as this utilises actual meter reads.

Correcting Historic Volume Calculations

There are a number of Supply Meter Points where volume calculations have taken place using incorrect logic and, therefore, reconciliation and AQ values have been calculated based upon, potentially, incorrect data. As part of this change, the CDSP will identify volume calculations that have included at least one meter read with a non zero TTZ indicator and assess, using the new logic defined within this change pack, whether that volume has been calculated incorrectly.

Any Supply Meter Points that are found to have had incorrect volume calculated historically will be corrected in line with the process used by the AQ Taskforce. This is:

- processing a financial adjustment to correct the reconciliation
- processing a financial adjustment to correct the capacity
- processing a change to the current Formula Year AQ where it is impacted

	Reconciliation Adjustment	Capacity Adjustment	Formula Year AQ Correction
Data correction	Until LIS (Line In the Sand)	18 Months	Current Live FYAQ

The Supply Meter Point Rolling AQ will be calculated in line with as is process following the receipt of the next qualifying read.

Volume periods that may have been calculated incorrectly previously will be excluded from having an historic volume corrected where:

- A subsequent check to check reconciliation has been performed and spans the potentially incorrect period
- A Consumption Adjustment has already been applied for the affected period
- The read, creating the incorrect volume, has since been replaced

G6: Associated Changes

Associated Change(s) and Title(s):	None
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G7: DSG

Target DSG discussion date:	22 nd March 2021
Any further information:	To discuss any comments provided from the Detailed Design Change Pack representations

G8: Implementation

Target Release:	November 2021
Status:	Approved

Please see the following page for representation comments template; responses to uklink@xserve.com

Section G: Change Pack

G1: Communication Detail

Comm Reference:	2827.6 - RT - PO
Comm Title:	XRN5072 Application and derivation of TTZ indicator and calculation of volume and energy – all classes Revised Detailed Design Change Pack
Comm Date:	17/05/2021

G2: Change Representation

Action Required:	For information
Close Out Date:	01/06/2021

G3: Change Detail

Xoserve Reference Number:	XRN5072
Change Class:	Functional System
ChMC Constituency Impacted:	Shipper Class A; Shipper Class B; Shipper Class C
Change Owner:	James Barlow Customer Change Specialist james.barlow@xoserve.com 0121 229 2802
Background and Context:	<p>Please Note: This is a revision of the Detail Design Change Pack that was originally issued in March 2021 (2808.2 - MT - PO). Following further analysis, it has been identified that:</p> <ol style="list-style-type: none"> 1. No incorrect volume is calculated following an inserted Check Read and, therefore, there will be no amendments made to the current logic for this scenario. 2. Where there is an estimated Transfer or Class change reading, a Check Read received via the Site Visit and Fault Notification (SFN) file is validated against the previous Check Read however the volume is calculated from the estimated Transfer or Class change read. As volume is calculated to a different read than that used for validation, a change is required to the volume calculation to derive a TTZ in line with read history. <p>All changes from the previous version of the detailed design have been highlighted in green and, where applicable, crossed-out within the Change Design Description section of this Change Pack. All other details remain unchanged but have been retained for your information.</p>

This revision is for information only and, therefore, we are not seeking representations for discussion at ChMC in June 2021 however, please submit any questions or comments through the normal channels.

Since Nexus implementation, there have been a number of scenario specific defects raised concerning the use of the Through The Zero (TTZ)/Round The Clock (RTC) indicator provided in Meter Reading files and how the resultant volume is then being calculated.

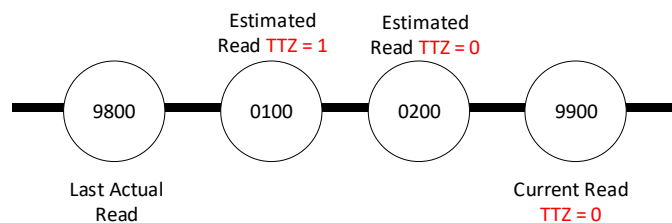
The TTZ indicator is used for meter read validation to confirm whether the meter readings provided have clocked (gone Through The Zeros) since the last actual read. Due to the inconsistent use of the TTZ and subsequent inaccurate volume calculation several processes are impacted including , reconciliation, capacity charges, rolling AQ and FYAQ calculations. This can result in potentially inaccurate EUC assignment, Daily Gas Allocation and Unidentified Gas.

For context, example scenarios have been provided below. Please note, there are multiple permutations of these examples taking into account variables such as Supply Meter Point (SMP) Class, read source, read order, number of estimated reads and existence of later actual, or estimated, reads.

Examples provided are for illustrative purposes only.

Example 1

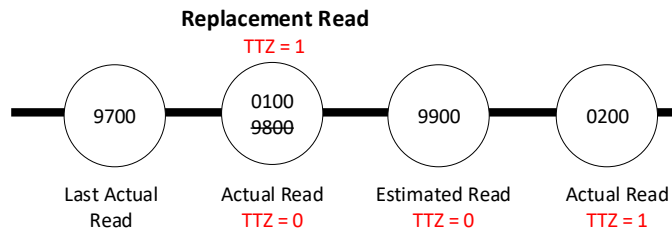
An actual read is provided with a TTZ value of zero following two estimated reads where one of these reads has a TTZ of 1.



In this scenario the provided, current, read has a TTZ value of zero. When calculating the volume between actual reads the TTZ of 1 from the 1st estimated read may result in an incorrect volume if not considered correctly.

Example 2

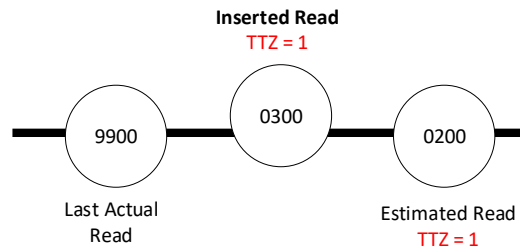
An existing read, with a TTZ of zero, is replaced by a read with a TTZ value of 1. A later estimated read, with a TTZ of 0, and a subsequent actual read, with a TTZ of 1, are present prior to the replacement read being received.



In this scenario, as the replacement read is higher, due to the TTZ value of 1, than the subsequent estimated read, if the TTZ from the estimated read is utilised as is then the forward volume calculation, from replacement to subsequent estimated read, will be incorrect.

Example 3

An actual read is inserted, with a TTZ value of 1, where an estimated read exists for a read date later than the inserted read, also with a TTZ value of 1.



In this scenario, as the TTZ value of both the inserted and subsequent estimated read is 1, as per example 2, if those TTZ values are utilised as is then the forward volume calculation, from inserted read to subsequent estimated read, will be incorrect.

When raised, the intention of the change was to address all issues in the utilisation of the TTZ in volume calculations regardless of SMP Class. However, during the detailed impact assessment it has been found that there are no issues for Supply Meter Points in Class 1 and Class 2 as better estimates are recalculated, where appropriate, following a valid actual read being loaded.

Also, in the original scope of the change, was a requirement to amend the logic utilised in the estimation of the TTZ value where one is not provided within an RGMA transaction. During the initial impact assessment it was found that a change to this logic would likely introduce more risk than it would remove and, therefore, was descoped from the change, with the support of DSG, in December 2020 (meeting papers can be found [here](#)). However, please note, the resultant volume calculation remains in scope of the change.

G4: Change Impact Assessment Dashboard (UK Link)

Functional:	Meter Read Processing (UK Link)
Non-Functional:	None

Application:	SAP ISU
User(s):	Shippers
Documentation:	None
Other:	N/A

Files				
File	Parent Record	Record	Data Attribute	Hierarchy or Format Agreed
None	None	None	None	None

G5: Change Design Description

Within the initial Change Pack consultation, a single solution option was proposed, and all representations were in support of this solution which is defined below. This was ratified by Change Managers at the Change Management Committee (ChMC) meeting in January 2021.

Solution Summary

This change seeks to utilise the meter read history of a given MPRN to derive the correct TTZ values to use in volume calculations following the receipt of a read with or, in the case of an RGMA read submitted without a TTZ, the generation of, a TTZ not equal to zero.

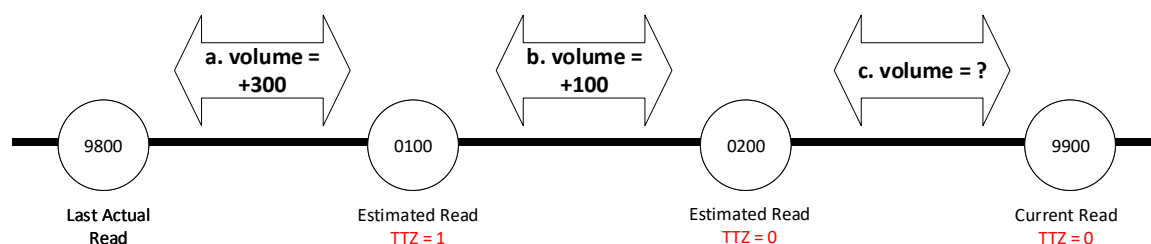
There are a large volume of scenarios to be considered when assessing the read history so the following, using the examples defined in section G3 above, defines the proposed core principles to be used.

Backward Volume

Where the read immediately prior to the read being processed is not an actual read the logic for determining the TTZ for use in calculating backward volume will be updated as follows:

The TTZ value of the Current Read (CR)
minus
 the sum of the TTZ value of all reads between the last actual read and the CR (excluding the last actual read and the CR)

The following is an example of the new backward volume calculation:



The TTZ used to calculate volume c. is derived by
 TTZ of the CR is **0**

minus

The SUM of all TTZ values between last actual and the current read (1st estimate is 1, 2nd estimate is 0) = 1

Therefore, a derived TTZ value of -1

The derived TTZ value of -1 will be applied to the current read for backward volume calculation. As volume is calculated between each read, estimated and actual, the current read must have a negative TTZ value so that volume c. is calculated as -300 and not as +9700.

For clarity, the derived TTZ value used in the volume calculation will not be stored. The read and the associated TTZ received, or generated, will be maintained.

Forward Volume

Where the current read is not the latest read held both backward and forward volume is calculated. Backward volume is calculated as defined above, the logic for determining the TTZ value for use in calculating the forward volume will vary based on the reads already present in UK Link. These variations are defined below.

It should be noted, where the received read is immediately prior to an existing actual read there are no changes required to the existing logic as the TTZ value to be used is already derived correctly.

Replacement Reads

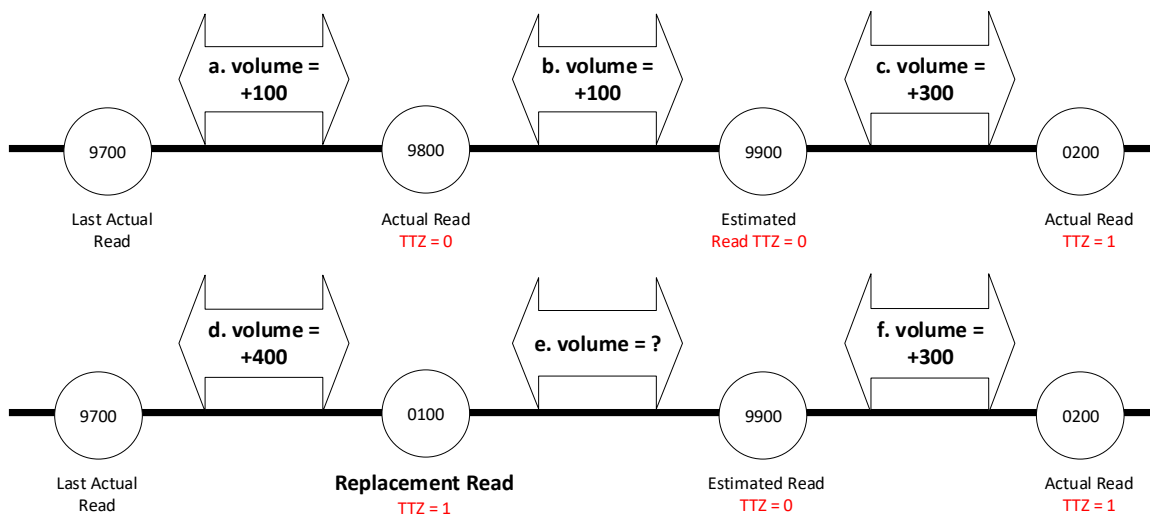
In the case of a replacement read, the volume has already been calculated between each of the reads prior to the read being replaced. Following receipt of a valid replacement read, backward volume is calculated using the logic above and the forward volume, from the replacement read to the subsequent read will be calculated as:

The total, original, backward and forward volume

minus

the replacement backward volume (between the replacement and the previous read)

The below is an example of a replacement read scenario:



e. volume is calculated by
Summing original volume, a. (100) & b. (100) = 200
minus

New backward volume from d. (400)
 Forward volume, e. = -200

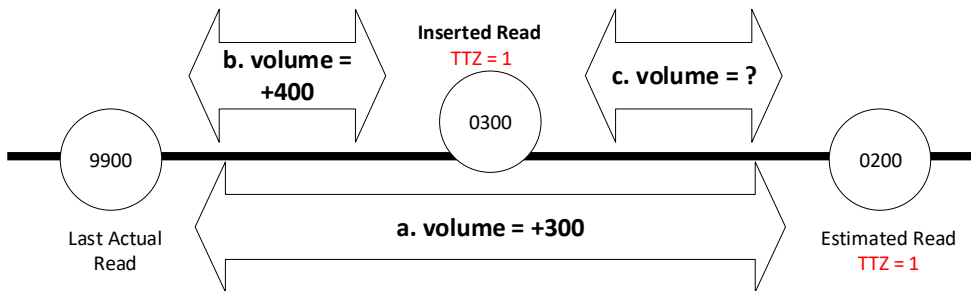
For clarity, the consumption period holding volume c. is not affected by the replacement reading and, therefore, the value persists as f.

Inserted Reads

Where a read is inserted in-between existing reads the backward volume is calculated using the logic above and the forward volume, from the inserted read to the subsequent read, will be calculated, in line with the replacement read scenario previously defined. For context, this will be as follows:

The volume between the original reads
minus
 the new backward volume (between the inserted read and the previous read)

The below is an example of an inserted read scenario:



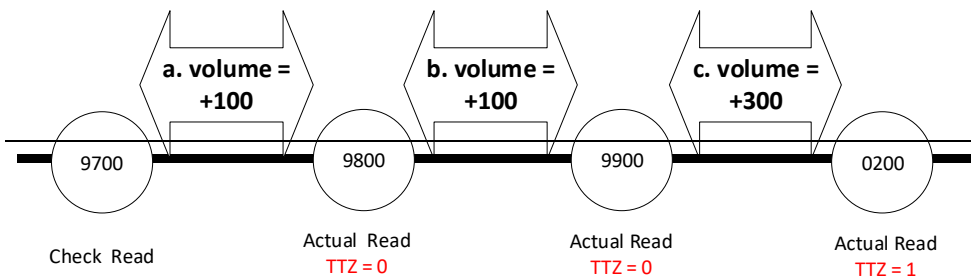
c. volume is calculated by
 Original volume from volume a. = (300)
minus
 New backward volume, b. = (400)
 Forward volume, c. = -100

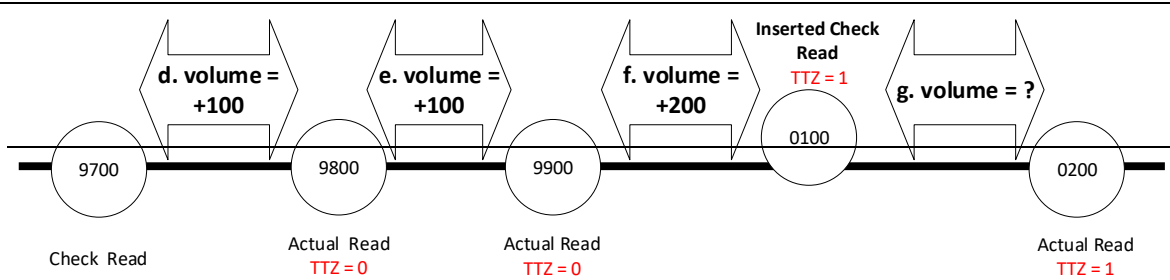
Inserted Check Reads

~~In the scenario where a check read, that is, a read triggering Check to Check reconciliation, is inserted prior to the latest read, the volume forward from the inserted read to the latest read will be calculated as:~~

~~Total volume between previous check read and the latest read
minus
 Volume between the inserted and previous check reads~~

~~The below is an example of an inserted check read scenario:~~





g. volume is calculated by
~~Summing volume a. (100), b. (100) & c. (300) = 500~~
~~minus~~
~~Volume d. (100), e. (100) & f. (200) = 400~~
~~Therefore volume g. = 100~~

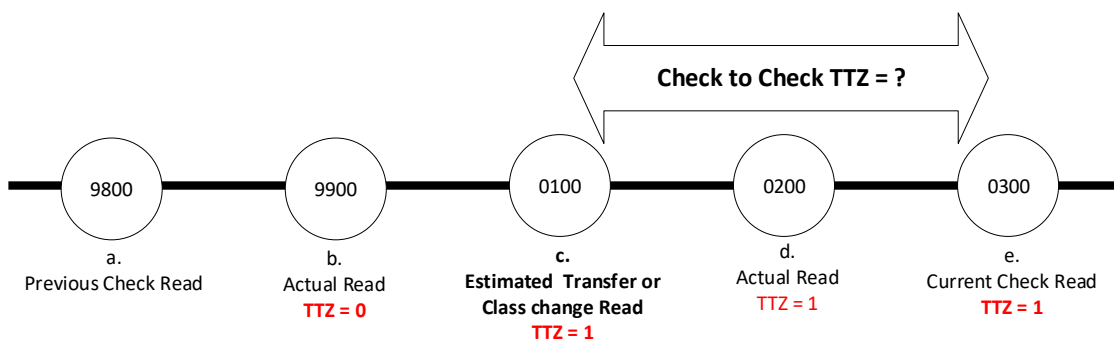
~~There is no change to the backward check to check volume calculation logic as this utilises actual meter reads.~~

Check to Check Volume following a Site Visit and Fault Notification (SFN) read

A read received via the SFN file will be validated against the previous Check Read and, where deemed Valid, will trigger Check to Check reconciliation. In the case where there is an estimated Transfer or Class change reading within the Check to Check period then the logic for determining the TTZ for use in calculating the Check to Check volume will be as follows:

TTZ of the Current Check Read
~~minus~~
 the SUM of all TTZs between the previous Check Read and, up to and including, the estimated Transfer or Class Change read (for clarity, this includes the TTZ on the estimated Transfer or Class change read but excludes the TTZ on the previous Check Read)

The below is an example of an SFN Check Read scenario:



e. TTZ is calculated by
 TTZ of the Current Check Read e. = 1
~~minus~~
 the SUM of all TTZs between the previous Check Read and, up to and including, the estimated Transfer or Class Change read b. (0), c. (1) = 1
 Therefore, TTZ e. = 0

The TTZ of the current Check Read must be derived as 0 so that the portion of the Check to Check volume back to the estimated transfer or Class Change Read, is calculated as +200 and not as +10200.

Please note, as per current process, the TTZ of the 'd. Actual Read' is not required to determine the TTZ for the Check to Check volume calculation as this read is not considered in the Check to Check reconciliation process.

Correcting Historic Volume Calculations

There are a number of Supply Meter Points where volume calculations have taken place using incorrect logic and, therefore, reconciliation and AQ values have been calculated based upon, potentially, incorrect data. As part of this change, the CDSP will identify volume calculations that have included at least one meter read with a non zero TTZ indicator and assess, using the new logic defined within this change pack, whether that volume has been calculated incorrectly.

Any Supply Meter Points that are found to have had incorrect volume calculated historically will be corrected in line with the process used by the AQ Taskforce. This is:

- processing a financial adjustment to correct the reconciliation
- processing a financial adjustment to correct the capacity
- processing a change to the current Formula Year AQ where it is impacted

	Reconciliation Adjustment	Capacity Adjustment	Formula Year AQ Correction
Data correction	Until LIS (Line In the Sand)	18 Months	Current Live FYAQ

The Supply Meter Point Rolling AQ will be calculated in line with as is process following the receipt of the next qualifying read.

Volume periods that may have been calculated incorrectly previously will be excluded from having an historic volume corrected where:

- A subsequent check to check reconciliation has been performed and spans the potentially incorrect period
- A Consumption Adjustment has already been applied for the affected period
- The read, creating the incorrect volume, has since been replaced

G6: Associated Changes

Associated Change(s) and Title(s):	None
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G7: DSG

Target DSG discussion date:	24 th May 2021
Any further information:	As this change pack is for information discussion at DSG is for clarification purposes only and will not seek any recommendations

G8: Implementation

Target Release:	November 2021
Status:	Approved

Section G: Change Pack

G1: Communication Detail

Comm Reference:	2859.2 - MT - PO
Comm Title:	XRN5072 Application and derivation of TTZ indicator and calculation of volume and energy – all classes Revised Detailed Design Change Pack
Comm Date:	12/07/2021

G2: Change Representation

Action Required:	For information
Close Out Date:	26/07/2021

G3: Change Detail

Xoserve Reference Number:	XRN5072
Change Class:	Functional System
ChMC Constituency Impacted:	Shipper Class A; Shipper Class B; Shipper Class C
Change Owner:	James Barlow Customer Change Specialist james.barlow@xoserve.com 0121 229 2802
Background and Context:	<p>Please Note: This is a revision of the Detail Design Change Pack that was issued in May 2021 (2827.6 – RT – PO). Following a customer query, a scenario has been identified where the backward volume calculation, defined in the previous versions of the Detail Design Change Pack, may not derive the correct TTZ and therefore calculate an incorrect consumption.</p> <p>The scenario identified is where the latest Valid actual read is an inserted, or replacement, read with a subsequent estimated read and a Valid, actual read is subsequently received with a later read date</p> <p>As a result, a change is required to ensure that, in this scenario, the correct volume is calculated, and those changes are defined within this revised Change Pack.</p>

All changes from the previous version of the detailed design have been highlighted in green and, where applicable, ~~crossed-out~~ within the Change Design Description section of this Change Pack. All other details remain unchanged but have been retained for your information.

This revision is for information only and, therefore, we are not seeking representations for discussion at ChMC in August 2021, however, please submit any questions or comments through the normal channels.

Since Nexus implementation, there have been a number of scenario specific defects raised concerning the use of the Through The Zero (TTZ)/Round The Clock (RTC) indicator provided in Meter Reading files and how the resultant volume is then being calculated.

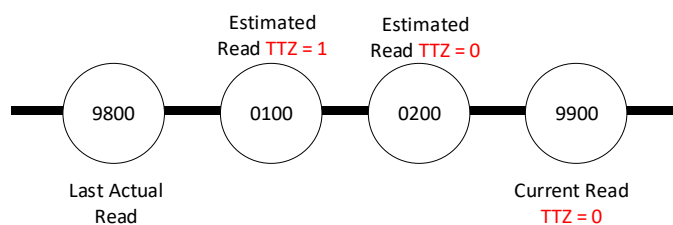
The TTZ indicator is used for meter read validation to confirm whether the meter readings provided have clocked (gone Through The Zeros) since the last actual read. Due to the inconsistent use of the TTZ and subsequent inaccurate volume calculation several processes are impacted including, reconciliation, capacity charges, rolling AQ and FYAQ calculations. This can result in potentially inaccurate EUC assignment, Daily Gas Allocation and Unidentified Gas.

For context, example scenarios have been provided below. Please note, there are multiple permutations of these examples taking into account variables such as Supply Meter Point (SMP) Class, read source, read order, number of estimated reads and existence of later actual, or estimated, reads.

Examples provided are for illustrative purposes only.

Example 1

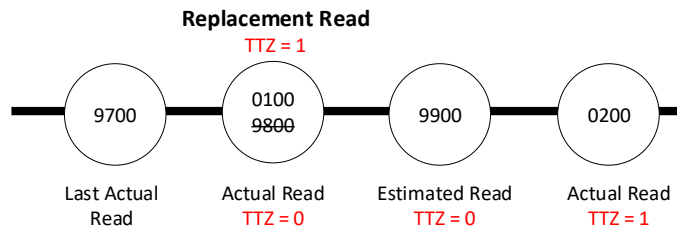
An actual read is provided with a TTZ value of zero following two estimated reads where one of these reads has a TTZ of 1.



In this scenario the provided, current, read has a TTZ value of zero. When calculating the volume between actual reads the TTZ of 1 from the 1st estimated read may result in an incorrect volume if not considered correctly.

Example 2

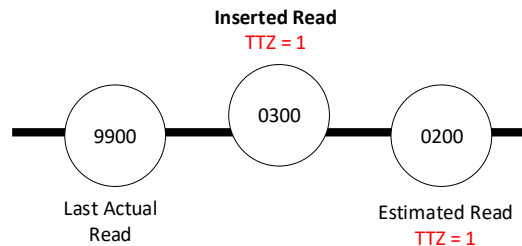
An existing read, with a TTZ of zero, is replaced by a read with a TTZ value of 1. A later estimated read, with a TTZ of 0, and a subsequent actual read, with a TTZ of 1, are present prior to the replacement read being received.



In this scenario, as the replacement read is higher, due to the TTZ value of 1, than the subsequent estimated read, if the TTZ from the estimated read is utilised as is then the forward volume calculation, from replacement to subsequent estimated read, will be incorrect.

Example 3

An actual read is inserted, with a TTZ value of 1, where an estimated read exists for a read date later than the inserted read, also with a TTZ value of 1.



In this scenario, as the TTZ value of both the inserted and subsequent estimated read is 1, as per example 2, if those TTZ values are utilised as is then the forward volume calculation, from inserted read to subsequent estimated read, will be incorrect.

When raised, the intention of the change was to address all issues in the utilisation of the TTZ in volume calculations regardless of SMP Class. However, during the detailed impact assessment it has been found that there are no issues for Supply Meter Points in Class 1 and Class 2 as better estimates are recalculated, where appropriate, following a valid actual read being loaded.

Also, in the original scope of the change, was a requirement to amend the logic utilised in the estimation of the TTZ value where one is not provided within an RGMA transaction. During the initial impact assessment it was found that a change to this logic would likely introduce more risk than it would remove and, therefore, was descoped from the change, with the support of DSG, in December 2020 (meeting papers can be found [here](#)). However, please note, the resultant volume calculation remains in scope of the change.

G4: Change Impact Assessment Dashboard (UK Link)

Functional:	Meter Read Processing (UK Link)
Non-Functional:	None
Application:	SAP ISU
User(s):	Shippers
Documentation:	None
Other:	N/A

Files				
File	Parent Record	Record	Data Attribute	Hierarchy or Format Agreed
None	None	None	None	None

G5: Change Design Description

Within the initial Change Pack consultation, a single solution option was proposed, and all representations were in support of this solution which is defined below. This was ratified by Change Managers at the Change Management Committee (ChMC) meeting in January 2021.

Solution Summary

This change seeks to utilise the meter read history of a given MPRN to derive the correct TTZ values to use in volume calculations following the receipt of a read with or, in the case of an RGMA read submitted without a TTZ, the generation of, a TTZ not equal to zero.

There is a large volume of scenarios to be considered when assessing the read history so the following, using the examples defined in section G3 above, defines the proposed core principles to be used.

Backward Volume

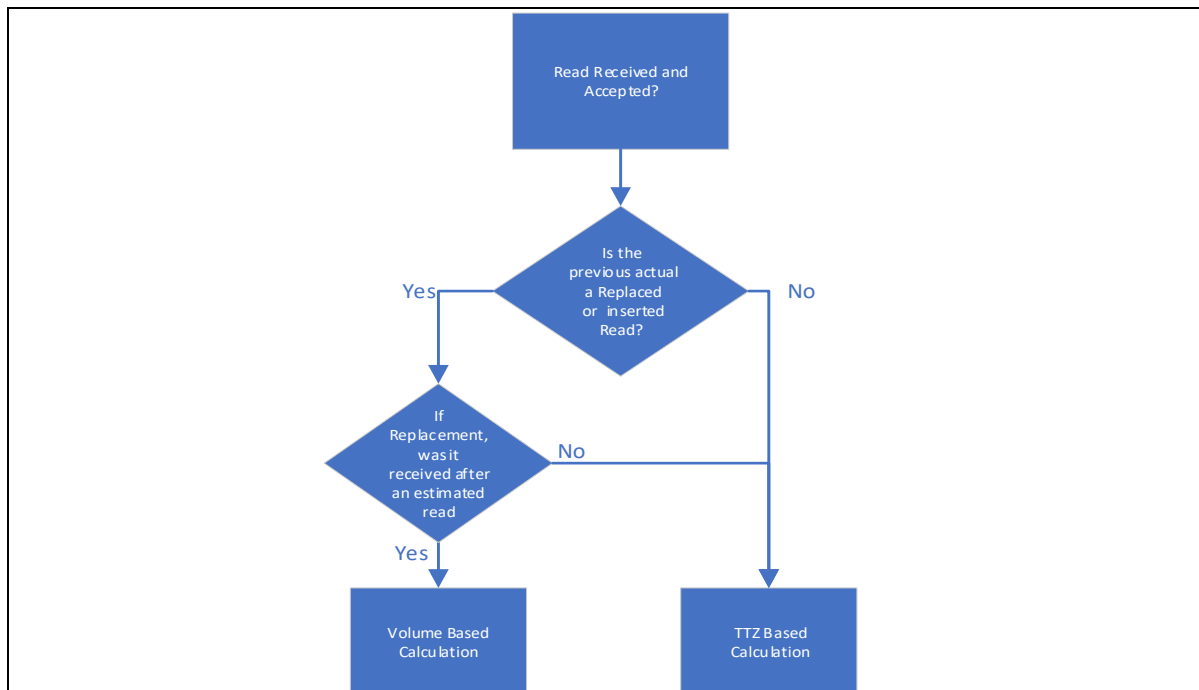
Where an actual, Valid, read is received, and the read immediately prior is not an actual read, a step will be added to the consumption calculation process to determine the backward volume calculation that will be used.

The additional step in the process will assess the read history to determine if a Valid actual read exists with a processing date that is later than the latest held estimated read processing date.

Where the outcome is Yes (there is an inserted or replaced read before the estimated read), then the process will use a volume based logic to calculate the Backward Volume

Where the outcome is No (there is not an inserted or replaced read before the estimated read), then the process will use a TTZ based logic to calculate the Backward Volume

This process flow is shown in the below diagram.

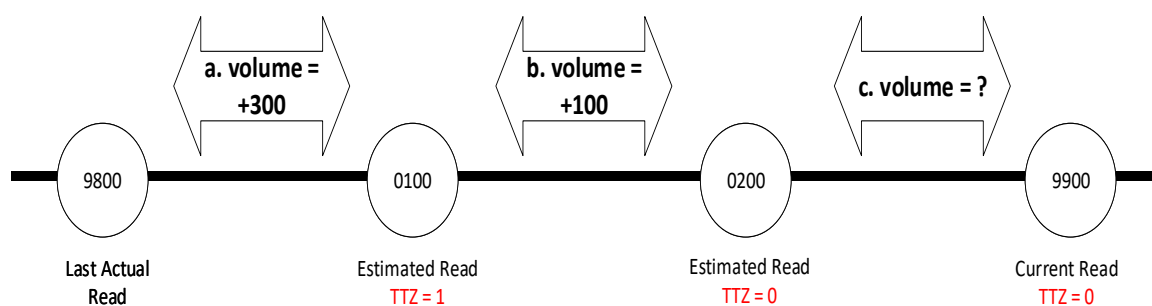


Backward Volume – TTZ Based Calculation

Where the read immediately prior to the read being processed is not an actual read, and the previous actual read is not an inserted or a replacement read received after to the estimated read, the logic for determining the TTZ for use in calculating backward volume will be updated as follows:

The TTZ value of the Current Read (CR)
minus
 the sum of the TTZ value of all reads between the last actual read and the CR (excluding the last actual read and the CR)

The following is an example of the TTZ Based volume calculation:



The TTZ used to calculate volume c. is derived by
 TTZ of the CR is 0
minus
 The SUM of all TTZ values between last actual and the current read (1st estimate is 1, 2nd estimate is 0) = 1
 Therefore, a derived TTZ value of -1

The derived TTZ value of -1 will be applied to the current read for backward volume calculation. As volume is calculated between each read, estimated and actual, the current

read must have a negative TTZ value so that volume c. is calculated as **-300** and not as +9700.

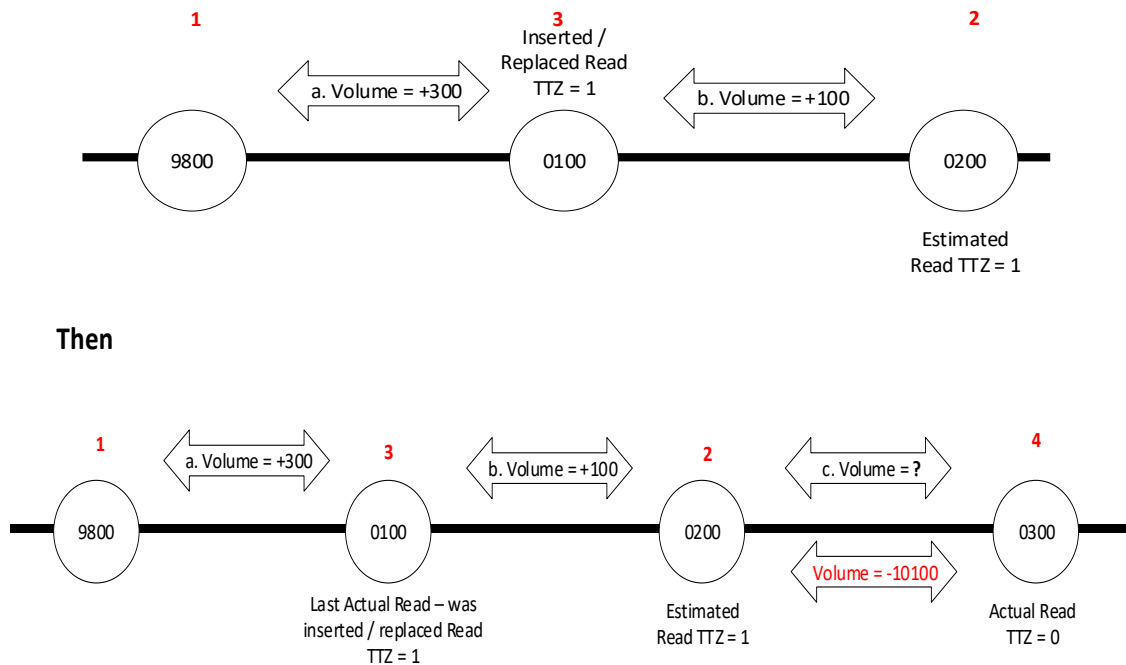
For clarity, the derived TTZ value used in the volume calculation will not be stored. The read and the associated TTZ received, or generated, will be maintained.

Backward Volume – Volume Based Calculation

Where the read immediately prior to the read being processed is not an actual read, and the previous actual read is an inserted or a replacement read received after the estimated read, the logic for determining the TTZ for use in calculating backward volume will be as follows

The volume between the Current Read (CR) and previous actual read
minus
the sum of the volume between the last actual read and the read immediately prior to the CR

The following is an example of this scenario. The first diagram shows the position following receipt of the inserted, or replacement, read. The second diagram shows a Valid actual read being subsequently received. For reference, the reads in this, and the latter, example have been labelled numerically to indicate the order in which they have been received:

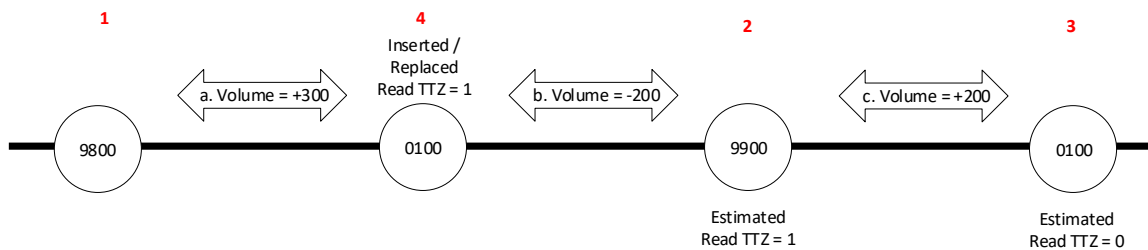


The volume between the CR 4 (300) and previous actual read 3 (100) is **200**
minus
the sum of the volume between the last actual read 3 (100) and the read immediately prior to the CR 2 (200) = **100**
Volume, c. = **100**

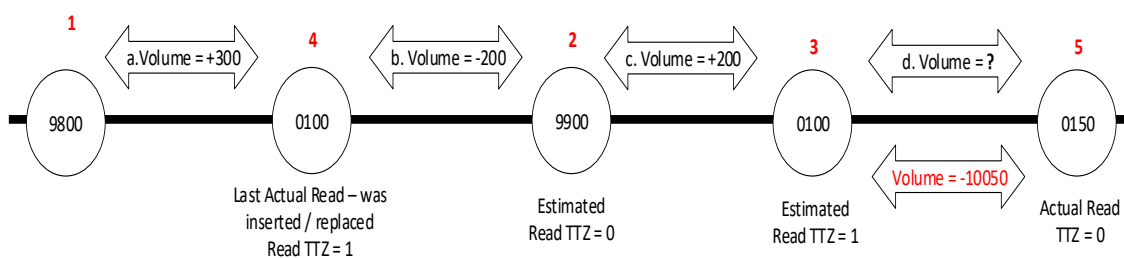
This calculation does not derive a TTZ however it will ensure that the volume of c. is calculated as **+100** and that the TTZ value between reads 2 and 4 is not referenced. If the

TTZ value between reads 2 and 4 was used, then the calculation would result in a volume of **-10100**.

The following example shows an inserted, or replacement, read where there are multiple subsequent estimated reads present but not a subsequent actual read. A Valid actual read is then subsequently received.



Then



The volume between the CR 5 (150) and previous actual read 4 (100) is **50**
minus
 the sum of the volume between the last actual read 4 (100) and the read immediately prior to the CR 5 (100) = **0**
 Volume, d. = **50**

To clarify, the volume of d. is calculated, correctly, as **+50** and the TTZ value between reads 3 and 5 is not referenced. If the TTZ value between reads 3 and 5 was used, then the calculation would result in a volume of **-10050**.

Forward Volume

Where the current read is not the latest read held both backward and forward volume is calculated. Backward volume is calculated as defined above, the logic for determining the TTZ value for use in calculating the forward volume will vary based on the reads already present in UK Link. These variations are defined below.

It should be noted, where the received read is immediately prior to an existing actual read there are no changes required to the existing logic as the TTZ value to be used is already derived correctly.

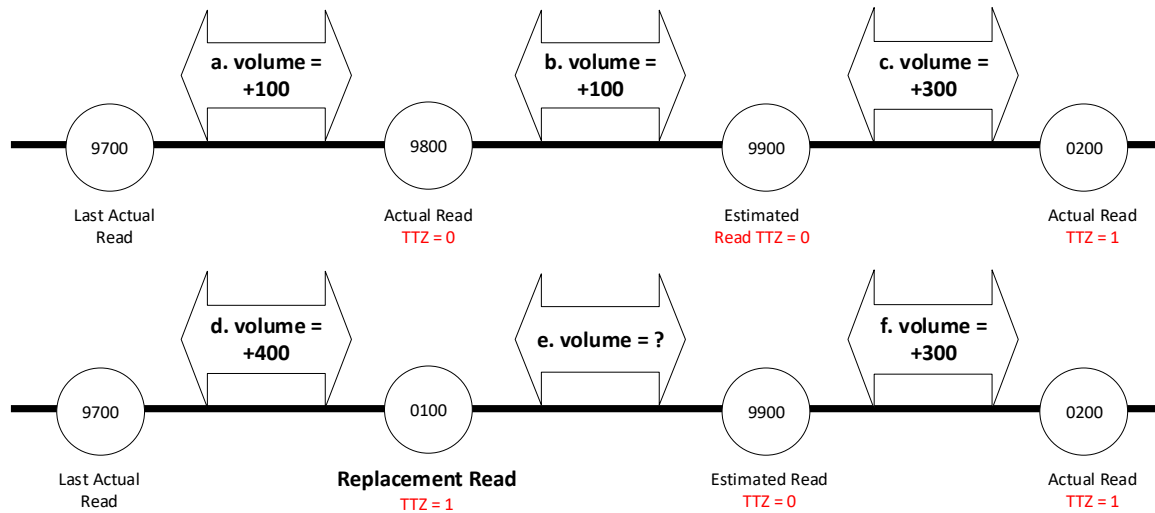
Replacement Reads

In the case of a replacement read, the volume has already been calculated between each of the reads prior to the read being replaced. Following receipt of a valid replacement read, backward volume is calculated using the logic above and the forward volume, from the replacement read to the subsequent read will be calculated as:

The total, original, backward and forward volume

minus
the replacement backward volume (between the replacement and the previous read)

The below is an example of a replacement read scenario:



e. volume is calculated by
Summing original volume, a. (100) & b. (100) = 200
minus
New backward volume from d. (400)
Forward volume, e. = -200

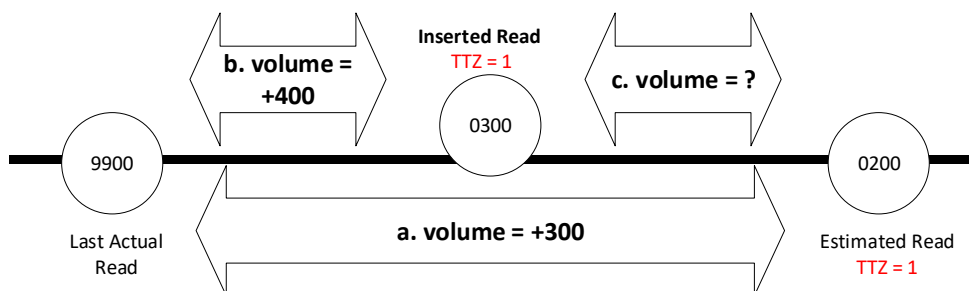
For clarity, the consumption period holding volume c. is not affected by the replacement reading and, therefore, the value persists as f.

Inserted Reads

Where a read is inserted in-between existing reads the backward volume is calculated using the logic above and the forward volume, from the inserted read to the subsequent read, will be calculated, in line with the replacement read scenario previously defined. For context, this will be as follows:

The volume between the original reads
minus
the new backward volume (between the inserted read and the previous read)

The below is an example of an inserted read scenario:



c. volume is calculated by
Original volume from volume a. = (300)

minus
 New backward volume, b. = (400)
 Forward volume, c. = -100

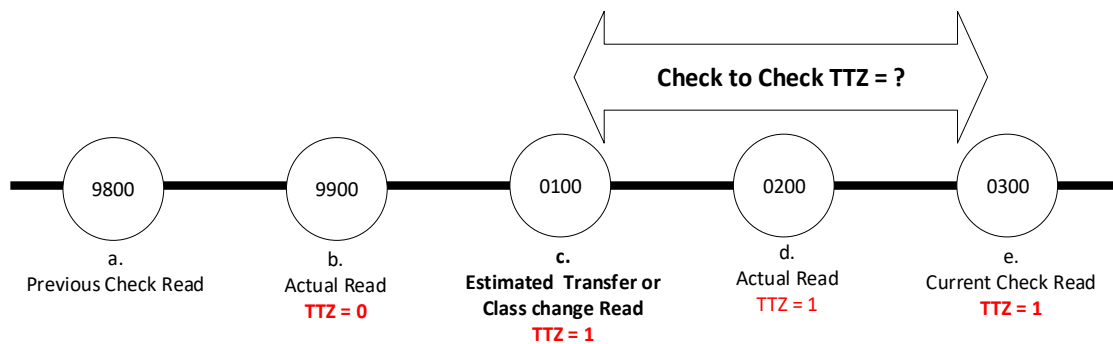
Check to Check Volume following a Site Visit and Fault Notification (SFN) read

A read received via the SFN file will be validated against the previous Check Read and, where deemed Valid, will trigger Check to Check reconciliation. In the case where there is an estimated Transfer or Class change reading within the Check to Check period then the logic for determining the TTZ for use in calculating the Check to Check volume will be as follows:

TTZ of the Current Check Read

minus
 the SUM of all TTZs between the previous Check Read and, up to and including, the estimated Transfer or Class Change read
 (for clarity, this includes the TTZ on the estimated Transfer or Class change read but excludes the TTZ on the previous Check Read)

The below is an example of an SFN Check Read scenario:



e. TTZ is calculated by
 TTZ of the Current Check Read e. = 1
 minus
 the SUM of all TTZs between the previous Check Read and, up to and including, the estimated Transfer or Class Change read b. (0),
 c. (1) = 1
 Therefore, TTZ e. = 0

The TTZ of the current Check Read must be derived as 0 so that the portion of the Check to Check volume back to the estimated transfer or Class Change Read, is calculated as +200 and not as +10200.

Please note, as per current process, the TTZ of the 'd. Actual Read' is not required to determine the TTZ for the Check to Check volume calculation as this read is not considered in the Check to Check reconciliation process.

Correcting Historic Volume Calculations

There are a number of Supply Meter Points where volume calculations have taken place using incorrect logic and, therefore, reconciliation and AQ values have been calculated based upon, potentially, incorrect data. As part of this change, the CDSP will identify

volume calculations that have included at least one meter read with a non zero TTZ indicator and assess, using the new logic defined within this change pack, whether that volume has been calculated incorrectly.

Any Supply Meter Points that are found to have had incorrect volume calculated historically will be corrected in line with the process used by the AQ Taskforce. This is:

- processing a financial adjustment to correct the reconciliation
- processing a financial adjustment to correct the capacity
- processing a change to the current Formula Year AQ where it is impacted

	Reconciliation Adjustment	Capacity Adjustment	Formula Year AQ Correction
Data correction	Until LIS (Line In the Sand)	18 Months	Current Live FYAQ

The Supply Meter Point Rolling AQ will be calculated in line with as is process following the receipt of the next qualifying read.

Volume periods that may have been calculated incorrectly previously will be excluded from having an historic volume corrected where:

- A subsequent check to check reconciliation has been performed and spans the potentially incorrect period
- A Consumption Adjustment has already been applied for the affected period
- The read, creating the incorrect volume, has since been replaced

G6: Associated Changes

Associated Change(s) and Title(s):	None
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G7: DSG

Target DSG discussion date:	26th July 2021
Any further information:	As this change pack is for information discussion at DSG is for clarification purposes only and will not seek any recommendations

G8: Implementation

Target Release:	November 2021
Status:	Approved

Version Control

Document

Version	Status	Date	Author(s)	Remarks
1.0	Proposal	02/01/2020	Xoserve	Proposal, ready to be sent to ChMC for the first time
2.0	With DSG	15/01/2020	Rachel Taggart	Approved to DSG at ChMC meeting on 08/01/20
3.0	With DSG	31/01/2020	James Barlow	Update to change description
4.0	With DSG	22/12/2020	Chan Singh	CP updated with discussions from DSG 14 th December 2020
5.0	Approval	12/01/2021	Rachel Taggart	Updated with solution review Change Pack and Reqs
6.0	Approved	20/01/2021	Rachel Taggart	Updated with outcome from ChMC on 13 th January 2021
7.0	For Approval	31/03/2021	Rachel Taggart	Detail Design Change Pack added
8.0	Approved	12/04/2021	Rachel Taggart	Outcome from ChMC on 7 th April added
9.0	With DSG	04/06/2021	Chan Singh	Cp updated with discussions from DSG 24 th May 2021
10.0	For Information	10/06/2021	Rachel Taggart	Updated with a reissued Detailed Design Change Pack
11.0	For Information	05/08/2021	Rachel Taggart	Updated with a reissued Detailed Design Change Pack

Appendix 1

Change Prioritisation Variables (XRN 5072)

Xoserve uses the following variables set for each and every change within the Xoserve Change Register, to derive the indicative benefit prioritisation score, which will be used in conjunction with the perceived delivery effort to aid conversations at the DSC ChMC and DSC Delivery Sub Groups to prioritise changes into all future minor and major releases.

Change Driver Type	<input type="checkbox"/> CMA Order <input type="checkbox"/> MOD / Ofgem <input type="checkbox"/> EU Legislation <input type="checkbox"/> License Condition <input type="checkbox"/> BEIS <input type="checkbox"/> ChMC endorsed Change Proposal <input type="checkbox"/> SPAA Change Proposal <input type="checkbox"/> Additional or 3 rd Party Service Request <input checked="" type="checkbox"/> Other <i>(please provide details below)</i> Where there is a Class 4 site with AMR/DRE installed, check to check reconciliation is carried out when Site Visit Reads are received. When an RGMA update is received (ONJOB or ONUPD) these reads are treated as Site Visit Reads. When an ONUPD (asset update) is submitted the shipper does not have to supply any meter reads or Round the Clock (RTC) count or TTZ count
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	<p>(Through The Zeros) so xoserve will generate estimated reads and derive a RTC if required. If the shipper is submitting an RGMA flow (ONJOB) and where the RTC is not supplied, the system will derive a RTC count.</p> <p>When the system looks to derive the RTC count it will be based on the Read history (last Actual read, last Check Read, AMR/DRE Installation read, Meter Install read, etc)</p> <p>For Project Nexus the RGMA design was taken from legacy CA Rules. The RGMA logic was considered as an 'As Is' process and the requirements were not changed. Under source rule 100278 it states "If the RTC is not provided, the RTC would be derived with an increment.</p> <p>We have seen instances where an RTC count of 1 is incorrect, as previous read history shows that the meter has gone round the clock several times. This has generated a reduced volume and energy, so has caused the AQ value to be understated and incorrect Reconciliation. This understated AQ affects all downstream processes that use the AQ value, (EUC assignment, daily allocation and the calculation of unidentified Gas).</p>
Please select the customer group(s) who would be impacted if the change is not delivered	<input checked="" type="checkbox"/> Shipper Impact <input checked="" type="checkbox"/> iGT Impact <input checked="" type="checkbox"/> Network Impact <input type="checkbox"/> Xoserve Impact <input type="checkbox"/> National Grid Transmission Impact
Associated Change reference Number(s)	N/A
Associated MOD Number(s)	N/A
Perceived delivery effort	<input type="checkbox"/> 0 – 30 <input checked="" type="checkbox"/> 30 – 60 <input type="checkbox"/> 60 – 100 <input type="checkbox"/> 100+ days
Does the project involve the processing of personal data? <i>'Any information relating to an identifiable person who can be directly or indirectly identified in particular by reference to an identifier' – includes MPRNS.</i>	<input checked="" type="checkbox"/> Yes <i>(If yes please answer the next question)</i> <input type="checkbox"/> No
A Data Protection Impact Assessment (DPIA) will be required if the delivery of the change involves the processing of personal data in any of the following scenarios:	<input type="checkbox"/> New technology <input type="checkbox"/> Vulnerable customer data <input type="checkbox"/> Theft of Gas <input type="checkbox"/> Mass data <input type="checkbox"/> Xoserve employee data <input type="checkbox"/> Fundamental changes to Xoserve business <input checked="" type="checkbox"/> Other <i>(please provide details below)</i> RGMA (ONUPD/ONJOB) and Check to Check Reconciliation is processed at meter point level (MPRN)
Change Beneficiary <i>How many market participant or segments stand to benefit from the introduction of the change?</i>	<input type="checkbox"/> Multiple Market Participants <input type="checkbox"/> Multiple Market Group <input checked="" type="checkbox"/> All industry UK Gas Market participants <input type="checkbox"/> Xoserve Only <input type="checkbox"/> One Market Group <input type="checkbox"/> One Market Participant
Primary Impacted DSC Service Area	Service Area 5: Metered Volume and Metered Quantity
Number of Service Areas Impacted	<input type="checkbox"/> All <input checked="" type="checkbox"/> Five to Twenty <input type="checkbox"/> Two to Five <input type="checkbox"/> One
Change Improvement Scale? <i>How much work would be reduced for the customer if the change is implemented?</i>	<input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low
Are any of the following at risk if the change is not delivered?	
<input type="checkbox"/> Safety of Supply at risk <input checked="" type="checkbox"/> Customer(s) incurring financial loss <input type="checkbox"/> Customer Switching at risk If this change is not delivered then the MPRNs will not have the correct Check to Check, Reconciliation and have an incorrect AQ value which will give inaccurate daily allocation and Shipper Share of Unidentified Gas	
Are any of the following required if the change is delivered?	

<input type="checkbox"/> Customer System Changes Required <input type="checkbox"/> Customer Testing Likely Required <input type="checkbox"/> Customer Training Required No	
Known Impact to Systems / Processes	
Primary Application impacted	<input type="checkbox"/> BW <input checked="" type="checkbox"/> ISU <input type="checkbox"/> CMS <input type="checkbox"/> AMT <input type="checkbox"/> EFT <input type="checkbox"/> IX <input type="checkbox"/> Gemini <input type="checkbox"/> Birst <input type="checkbox"/> Other <i>(please provide details below)</i>
Business Process Impact	<input checked="" type="checkbox"/> AQ <input type="checkbox"/> SPA <input checked="" type="checkbox"/> RGMA <input type="checkbox"/> Reads <input type="checkbox"/> Portal <input type="checkbox"/> Invoicing <input type="checkbox"/> Other <i>(please provide details below)</i>
Are there any known impacts to external services and/or systems as a result of delivery of this change?	<input type="checkbox"/> Yes <i>(please provide details below)</i> <input checked="" type="checkbox"/> No
Please select customer group(s) who would be impacted if the change is not delivered.	<input checked="" type="checkbox"/> Shipper impact <input checked="" type="checkbox"/> Network impact <input checked="" type="checkbox"/> iGT impact <input type="checkbox"/> Xoserve impact <input type="checkbox"/> National Grid Transmission Impact
Workaround currently in operation?	
Is there a Workaround in operation?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes who is accountable for the workaround?	<input type="checkbox"/> Xoserve <input type="checkbox"/> External Customer <input type="checkbox"/> Both Xoserve and External Customer
What is the Frequency of the workaround?	N/A
What is the lifespan for the workaround?	N/A
What is the number of resource effort hours required to service workaround?	N/A
What is the Complexity of the workaround?	<input type="checkbox"/> Low <i>(easy, repetitive, quick task, very little risk of human error)</i> <input type="checkbox"/> Medium <i>(moderate difficult, requires some form of offline calculation, possible risk of human error in determining outcome)</i> <input type="checkbox"/> High <i>(complicate task, time consuming, requires specialist resources, high risk of human error in determining outcome)</i>
Change Prioritisation Score	47%

Document Control

Version History

Version	Status	Date	Author(s)	Summary of Changes
1	Draft	27/04/18	Anesu Chivenga	
1.1	approved	27/12/19	Pooja Patel	Updates have been made to the DPIA information

