

Mr. George Passmore  
Director Business Performance  
Queensland Competition Authority  
Level 27, 145 Ann Street  
Brisbane QLD 4000

17 March 2022

Dear George,

### **Aurizon Network Pty Ltd (Aurizon Network) – Response to the QCA’s Draft Decision on Aurizon Network’s FY2021 Capital Expenditure Claim**

Aurizon Network welcomes the opportunity to provide a response to the Queensland Competition Authority’s (QCA) Draft Decision on the FY2021 Capital Expenditure claim (**FY21 Capex Claim**). This submission provides further information in support of Aurizon Network’s claim.

## **Context**

On 17 September 2021, Aurizon Network submitted its FY21 Capex Claim to the QCA for approval. The FY2021 Capex Claim was comprised of three parts, including:

- \$241.3 million for Asset Replacement and Renewal Expenditure (**Renewals Capex Claim**);
- \$60.0 million for the Advanced Planning and Scheduling system (**APS Capex Claim**); and
- \$9.4 million for the Starlee Passing Loop (**Starlee Expansion Claim**),

with a combined value of \$310.7 million including Interest During Construction (**IDC**).

The QCA engaged Arcadis Australia Pacific Pty Ltd (**Arcadis**) to provide an assessment of the prudence and efficiency of the APS Capex Claim. Arcadis assessed the works and expenditure undertaken in relation to the design, development, and implementation of the Advanced Planning and Scheduling (**APS**) system and associated enhancements to Aurizon Network’s reporting capability.

On 17 February 2022, the QCA notified Aurizon Network that it was minded to accept most of Aurizon Network’s FY2021 Capex Claim. Specifically, the QCA intends to approve:

- the full claimed amounts relating to both the Renewals Capex Claim and the Starlee Expansion Claim; and
- a reduced amount for the APS Capex Claim.

The QCA is currently considering refusing to approve amounts (totalling \$5.9 million) in relation to the APS Capex Claim, stating that these amounts are either not justified, or attributable to inefficient practices. These amounts include:

- payments totalling \$3.2 million, which relate to scope changes throughout the project that require further justification (**Amount 1**); and
- extension of time payments [REDACTED] made to the principal contractor (**GE**) (**Amount 2**). The QCA Draft Decision identifies this as a process inefficiency, noting that GE appears to have committed to a fixed price delivery by an agreed date and GE's inability to deliver is clearly documented.

Notwithstanding the delays encountered during the development and delivery of APS, Aurizon Network maintains that the above amounts are prudent and efficient in the context of an information and communications technology (**ICT**) project of this scale and complexity. Aurizon Network confirms that the amounts in question relate to costs associated with the detailed design, implementation and acceptance testing of functionality enhancements and improvements required to meet the needs of system users and to achieve the project objectives, i.e. modernised and improved planning and scheduling outcomes for the Central Queensland Coal Network (**CQCN**).

Furthermore, in light of the challenges faced by Aurizon Network in relation to the project's complexity, Aurizon Network acted appropriately by [REDACTED] ultimately amending the delivery model, governance and processes to drive the project to completion.

The remainder of this submission provides further information in support of Aurizon Network's expenditure which the QCA is considering refusing to approve for inclusion into the Regulatory Asset Base (**RAB**). For clarity, Aurizon Network is not providing any further information in relation to either the Renewals Capex Claim or the Starlee Expansion Claim Draft Decisions.

## Amount 1: Reductions totalling \$3.2 million

The Arcadis assessment report<sup>1</sup> identifies that expenditure of approximately \$8.1 million is associated with 'vendor scope contingency'. Arcadis has viewed this to be associated solely with scope changes that were necessary to comply with requirements introduced in the UT5 Access Undertaking. Arcadis states that there were no documented changes in scope through the project apart from UT5, resulting in the inability to determine the validity of the additional amount identified.

Aurizon Network disagrees with Arcadis' assessment, and notes that the need for additional works was outlined in the Pluto Project Completion Report.<sup>2</sup> This refers not only to changes in the regulatory environment and associated project scope, but also to the challenges faced as a result of the complexity and bespoke nature of the project. Furthermore, the replacement of GE's subcontractor (SolveIT) did impact design timelines and design effort, because changes had to be made to accommodate a different underlying product, i.e. SolveIT's underlying product was different from that of the sub-contractor who replaced it, Quintiq Pty Ltd. This ultimately resulted in a number of variation requests being raised in the development and implementation of the project.

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<sup>1</sup> Arcadis (2022), Part B: Aurizon Network Capital Expenditure Claim 2020-21, Advanced Planning and Scheduling (APS) system, February, pg. 27

<sup>2</sup> Aurizon Network (2021), Pluto Project Completion Report, pg. 20.

## The contractual arrangements include variation provisions

IT service agreements typically include variation clauses which provide a defined mechanism to allow a degree of flexibility where project requirements change. Variation clauses encourage parties to ensure that any variations to the contract are documented and authorised. This in turn minimises inadvertent or informal variations and helps to avoid disputes.

It should be noted that when developing and implementing complex ICT projects, such as Project Pluto, it is difficult to understand, design for and control every potential aspect or scenario that may be encountered. Like any major project, additional changes or requirements may be identified and requested once subject matter experts or end users of the software commence testing / use of the system, or as a result of learnings / maturation of business processes.<sup>3</sup>

Aurizon Network confirms that the contractual arrangements with GE included provisions for “Variations to Services or Software”. Aurizon Network has paraphrased some of the relevant variation contractual provisions below:

- Aurizon Network may request that the contractor perform a variation and, following a joint discussion to determine technical feasibility, the contractor would perform that variation;
- Before commencing work on a variation:
  - the contractor must first receive a request from Aurizon Network or have submitted a request to review a proposed variation to Aurizon Network;
  - the contractor must notify Aurizon Network as to whether the variation will result in a change to the charges (to be mutually discussed and agreed); and
  - Aurizon Network must have agreed to the revised charges.
- The contractor is not entitled to any claim to the extent a variation results from:
  - the contractor being in material breach of the agreement;
  - a direction requiring that documentation, software or services which doesn’t comply with the agreement be changed to comply with the agreement; or
  - wilful misconduct or negligent act or omission of the contractor or personnel.<sup>4</sup>

Aurizon Network notes that the QCA has previously reviewed Project Pluto’s change management process as part of the FY2016 capital expenditure claim relating to Movement Planner. Aurizon Network notes that all variation expenditure associated with Movement Planner was approved for inclusion into the RAB.

## Nature of the variations associated with the costs that the QCA is considering refusing to approve

In addition to the scope changes that were necessary to comply with requirements introduced in the UT5 Access Undertaking, Aurizon Network confirms that it required a number of variations to be made to the software over the life of the project. A well-defined process was implemented to govern variation requests, which were documented via change requests or ‘Requests for Service’. The nature of the variations in question by the QCA relate to:

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<sup>3</sup> Aurizon Network (2021), Pluto Project Completion Report, pg. 21.

<sup>4</sup> Aurizon (2012), IT Services Agreement, Contract ISD970, Clause 15 Variations to Services or Software.

- software enhancements or refinements (including additional functionality required to meet the operating paradigms and complexities of the CQCN, to improve usability and to promote data integrity); and
- the detailed design and associated testing effort to validate the design for the APS solution.

Following discussions with the contractor in relation to each variation request, which included some preliminary design work and an assessment of whether the variation would result in a change to charges (for either the contractor, Aurizon Network or both parties in accordance with the terms of the contract), Aurizon Network would then decide whether to proceed with the change, or not.

If the decision was made to proceed with the works, the additional costs associated with these variations would be endorsed and invoiced following delivery.

### Examples of variation items

Aurizon Network has provided a list and high-level description of a selection of activities that were associated with the costs that the QCA is considering refusing to approve. These are provided in Appendix 1 below.

Aurizon Network confirms that the variation items that were requested relate to functionality that was required to ensure that the system can best meet user requirements and achieve the overall project objectives. Aurizon Network maintains that this expenditure was prudent and efficient and that any additional costs associated with the variations were determined in accordance with the contractual arrangements. As a result, Aurizon Network considers that the QCA should approve all associated Amount 1 expenditure for inclusion into the RAB.

### Amount 2: Extension of time payments

The Arcadis assessment report<sup>5</sup> questions the prudence of the Extension of Time (EOT) expenditure, citing the inability of the Principal Contractor and approved subcontractor to deliver the product on time and under a fixed price delivery.

Aurizon Network acknowledges that the project delivery timeframes were impacted by challenges relating to the complexity of the solution that was required for the CQCN, and the impact that this ultimately had on the timely delivery of Project Pluto. Aurizon Network's APS Capex Claim made it clear that the software was not available as an off the shelf solution that could be applied directly to the CQCN. Aurizon Network also requested variations during the project as a result of learnings during testing and as business processes matured and evolved to meet the requirements of the CQCN End Users including the preservation of Committed Capacity. As a consequence, despite the design effort that went into developing the required software, delays to the project schedule were incurred. Nevertheless, Aurizon Network considers that its approach of requesting variations during the development of the project was a more cost effective and efficient solution than the alternative, which would have meant implementing an incomplete solution and relying on a multitude of patches / software updates post implementation.

It is also important to note that while Aurizon Network did incur additional costs associated with variations that it had requested, the documentation provided to the QCA in support of the APS Capex Claim identifies that the schedule delays that were caused by GE and its subcontractor resulted in "GE incurring its own cost over runs, which are likely to be significantly higher than Aurizon's."<sup>6</sup> While Aurizon Network was notified that GE would be

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<sup>5</sup> Arcadis (2022), Part B: Aurizon Network Capital Expenditure Claim 2020-21, Advanced Planning and Scheduling (APS) system, February, pg. 27

<sup>6</sup> Aurizon Network (2016), Additional Funds/Change of Scope Approval Request, pg. 4

incurring its own costs, the full extent of GE's own cost overruns has not been communicated to Aurizon Network. For clarity, costs associated with delays caused by GE and its subcontractor do not form part of the APS Capex Claim.

### **The contractual arrangements include Extension of Time provisions**

EOT provisions are a common feature of IT service agreements and recognise that delays can happen (for a number of reasons) during a project. If a delay is not caused by the contractor, the contractor may be entitled to make an EOT claim with respect to the project schedule and seek compensation where additional costs are incurred as a result of external factors that are beyond its control. EOT provisions also protect the client, providing a mechanism whereby both parties can seek to agree a variation to the project schedule and cost, rather than being in breach of the contract allowing the contractor to terminate the contract.

The contractual arrangements between Aurizon and GE include provisions that permit the contractor to submit an EOT for any milestone or deliverable, subject to certain conditions. These conditions include, but are not limited to instances where:

- the contractor has been delayed in performance or delivery by an act or omission of Aurizon; or
- an extension is required as a result of a variation requested by Aurizon.<sup>7</sup>

In the event that the delay affects the contractor's ability to perform its obligations, there is an opportunity for the contractor to submit a claim for an EOT. The EOT claim outlines amongst other things, the duration of the extension required, and if granted, variations to pricing that are to be determined in accordance with the contract.

### **Nature of the EOT payments that the QCA is considering refusing to approve**

The EOT payments made by Aurizon Network to GE relate to two matters:

[REDACTED]

Aurizon Network notes that the root cause of the two EOTs were linked to the addition of functionality enhancements and system improvements required by Aurizon Network, and a desire to meet Customer expectations to maximise throughput in the weeks leading up to the end of FY2016.

Further information on the basis for each EOT is documented in respective change requests, [REDACTED]  
[REDACTED]. Aurizon Network has provided a brief summary of each EOT below.

[REDACTED]

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<sup>7</sup> Aurizon (2012), IT Services Agreement, Contract ISD970, Clause 15.5 Extensions of Time.

[REDACTED]

[REDACTED]

[REDACTED]

Aurizon Network notes that in its APS Capex Claim, a voluntary deduction of approximately \$0.8m has already been applied to the IDC calculations, in recognition of delays to the project [REDACTED]. If the QCA is not minded to approve costs associated with this EOT for inclusion into the RAB, Aurizon Network requests that the QCA recognise the value that Aurizon Network has already removed as an offset, i.e. Aurizon Network should not be penalised twice.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In light of the above circumstances, Aurizon Network considers that the EOT payments (Amount 2 expenditure) are prudent and should be approved by the QCA.

## Conclusion

Aurizon Network reiterates that the amounts that the QCA is currently considering refusing to approve relate to prudent expenditure incurred to ensure that the software meets the needs of the CQCEN and delivers a modernised solution capable of delivering improved planning and scheduling outcomes.

Aurizon Network notes that:

- payments totalling \$3.2 million, were associated with variations requested by Aurizon Network to improve and enhance functionality and usability of the software; and
- EOT payments [REDACTED] were made to GE as a result of delays attributable to Aurizon Network's requests:
  - for additional system enhancements; and

– to provide Customers with an opportunity to maximise throughput in the final weeks of FY2016.

Aurizon Network requests that the QCA considers the additional information provided by Aurizon Network in making its final decision on the APS Capex Claim.

If you have any questions in relation to this correspondence or require any further information pertaining to the FY2021 APS Capex Claim, please do not hesitate to contact Michael Bray via email

[Michael.Bray@aurizon.com.au](mailto:Michael.Bray@aurizon.com.au)

Yours sincerely



Jon Windle

Manager Regulation

Aurizon Network

## Appendix 1: Description of Scope Variations

The following table provides a description of the nature of the scope variations associated with the costs the QCA is considering to refuse to approve. These costs associated with these activities relate to functionality enhancements, system improvements and detailed design works.

**Table 1 Selection of activities that are associated with the ‘Scope Variations’ cost**

Variations	Description
TSE Buckets	<p>Design allowed TSE Contracts to have TSE Obligated and TSE Forecast values allocated and adjusted for Financial Year, Monthly, Weekly and Daily time buckets. Initially, there was no link between these different time buckets, meaning that calculations and adjustments of TSE allocations between the different bucket types did not automatically adjust the other (related) bucket types for the associated contract.</p> <p>This change was requested to ensure the accuracy of TSE allocations for TSE Obligated / Forecast values and to ensure that they did not become out of sync within the system and lead to inaccurate and contradictory demand vs capacity outcomes.</p>
Capacity Calculations	<p>Variations to capacity calculation to recognise asset activity outages which overlap in both time and space within the defined Traffic Channels (master data for the capacity model), rather than asset activity outages which only overlap in time within the defined Traffic Channels.</p> <p>This variation related to the calculation of the direct constrained capacity on a Traffic Channel which was initially defined incorrectly.</p>
Track Manager Train Ownership Rules	<p>Train services can be scheduled through multiple adjoining track manager’s territory. To ensure integrity of the data, a ‘Scheduling Track Manager’ attribute is applied when the train is created in each track manager’s system and processing rules are applied as to how the adjoining track manager can edit the train. These ownership rules were not originally included in the proposed Quintiq solution, and the existing scheduling interface to Queensland Rail to allow scheduling through adjoining track manager territory could not be supported without the requested change.</p>
Journey Order Import File	<p>Complete TSE Contract and Journey Order information was required when creating a full Journey/Train. This was not supported by the initial design and a change was required to ensure the Intermediate Train Graph could be prepared within the required regulatory timeframes.</p>
Determining Direction of Travel	<p>There are a number of locations on the Aurizon Network where a train is considered to change direction as either the Up or Down direction. To aid in safe working, Aurizon Network utilises odd or even numbering to represent which direction the train is travelling between locations. These direction changes can occur many times within a single train as they are based on route. Direction of travel was initially applied at the service template, and subsequently applied to the train, however, this did not allow for directional changes over the course of a single train schedule.</p> <p>This change was proposed to avoid creating a potentially high impact functional restriction relating to how trains are created by Aurizon Network. It also avoided the need to change numerous other Aurizon Network and customer applications and reporting tools.</p>
Identifying Timing Nodes	<p>Actual times for each station were to be applied and recorded from ViziRail. Within ViziRail, the timing node is nominated against the topology. Initial solution was restricted to only one timing node nominated per station. To ensure reporting integrity, Aurizon Network required the ability to consistently nominate specific nodes as timing nodes to be utilised by all trains travelling through a station regardless of direction.</p>
Topology – Node and Track Section Attributes	<p>The topology model allowed only limited detail to be captured for Nodes and Track Sections. Whilst this supported the creation of trains, asset activities and stowage/storage objects, the descriptive value to users did not meet Aurizon Network’s requirements. A change was requested.</p>

Variations	Description
Historical Datasets	<p>In order to avoid unrealistic hardware requirements, modifications were proposed to the model architecture to reduce the number of objects in the Scheduling Dataset. Initially (early 2015) the Scheduling Dataset's size was estimated to be approximately 20GB. Since then a change in the assumptions used to derive the size of the dataset (x5 impact) and model redesign (x2 impact) resulted in a cumulative expected increase to up to 160 GB. Subsequent revision of these assumptions by Aurizon Network and technical alterations made by Quintiq have reduced the expected dataset size back to 50-60GB, but was expected to result in severe performance impacts to the system which could not be supported.</p> <p>Quintiq proposed several solutions and actions to solve this problem. One of which was to remove the historical horizon data (approx. 30 days of Journeys, Trains, Asset Activity, Stowage &amp; Storage) from the Scheduling Dataset into a separate Historical dataset.</p>
Track Section Details	<p>The network form initially did not display the UP and DOWN direction of a road. The UP and DOWN road is an Aurizon Network naming convention used to describe mainlines. A change was requested to create a canvas label on the network form which in turn will provide planners with additional information of the topology network they are working on.</p>
Asset Activity and Stowage/Storage filtering	<p>High volumes of Asset Activities and Stowage and Storage are anticipated throughout the CQCN. A change was requested providing the ability to filter Asset Activities and Stowage/Storage based on specific filtering criteria such as Network Groups and Time horizon.</p>
Source Timetable in Journey in Plan	<p>When Journeys were created in the Plan from a Timetable, they were initially created without any link or reference to the timetable from which they were derived. This change created a link between Journey Timetable and Journey Plan.</p>
Create asset activities in scheduling dataset	<p>This change was requested to provide functionality to create Asset Activities in the scheduling dataset without having to change datasets to TSE Plan every time.</p>
Status Applied to Asset Activity Outages	<p>Initial design only allowed functionality to cancel an entire asset activity, rather than a smaller subset of outages representing constraints on the Network. This did not reflect the business process and did not record the status of the Asset Activity and Outages.</p> <p>Aurizon Network requested this change to ensure that the solution provided opportunities to fully utilise available capacity.</p>
Asset Activity Import File	<p>Aurizon Network required the functionality to import asset activity information for infrastructure outages/restrictions (civil / electrical outages &amp; speed restrictions), adjoining infrastructure outages, and multiple outages at a time.</p>
Bulk Processes Journeys and Trains	<p>CQCN maintenance activities can last for long periods, and can be impact on train services for a route. Aurizon Network required functionality to allow bulk updates to be completed across a range of services or activities in a timely manner.</p>
Topology Modification Impacts	<p>Changes to topology regularly occur and each change had the potential to invalidate the train route used by the service template. Aurizon Network required functionality that would re-validate templates and other APS objects with the introduction of topology changes.</p>
APEX Constraint Design	<p>Changes were required to manage the integration of constraints between APS, Movement Planner and ViziRail.</p>
APEX Train Plan Update Design (Est/Acts)	<p>Changes were required to manage Train Plan Updates between APS, Movement Planner and ViziRail.</p>