



TS 00018:1.0
Framework

Technical Supplier Assurance Framework

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Review

This document should be reviewed following any significant changes in business processes and at least on an annual basis. The document owner will provide an independent assurance review on implementation of this framework to the TfNSW Technical Supplier Assurance Community of Practice on an annual basis.

Preface

Commencing in 2013, via the Transport for NSW (TfNSW), Asset Standards Authority (ASA) maintains and administers the Authorised Engineering Organisation (AEO) model for the assessment, authorisation, surveillance, review and audit of AEOs that provide technical services across the asset life cycle of any asset that supports the delivery of services for NSW Transport.

The AEO model authorised engineering organisations to supply and provide asset related products and services to TfNSW. It was established to assure the safety, quality and fitness for purpose of those products and services over the asset's whole-of-life. AEOs are expected to demonstrate how they have applied the requirements of TfNSW documents, including TfNSW plans, standards and guides, when delivering assets and related technical services for TfNSW.

An AEO is authorised across technical capability areas within the scope and demonstrated competency of their authorisation and when engaged as an AEO by TfNSW are accountable to provide a self-assured product or service. TfNSW apply risk-based verification, due diligence and assurance, scalable to the size and risk of the project or program of work.

In 2019 TfNSW recognised that industry had matured in the delivery of technical services and a shift in the application of the AEO model was necessary to reflect this. In 2020 and 2021, TfNSW engaged industry representatives and through collaboration the AEO shifted from an authority focus to an assurance focus. This shift in focus encourages industry to innovate while at the same time, work within a technical accountability framework. This framework is now known as the Technical Supplier Assurance (TSA) Framework. An entity meeting the requirements of the TSA Framework will now be known as Technically Assured Organisation (TAO). Any entity that is already an AEO will automatically become a TAO.

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1 Introduction

As a government entity and the ultimate owner, along with the Transport Asset Holding Entity (TAHE), of the assets that are used to deliver transport services, TfNSW has an overarching obligation to achieve the best possible outcome for our customers, taxpayers and the State.

Transport for NSW (TfNSW) works to deliver great outcomes for both our customers and the people of NSW – outcomes that seek “*To make New South Wales a better place to live, work and visit.*”

This translates into a large program of work, delivering assets and services for our customers across the state. In order to deliver such a large program, we draw on technical expertise from a range of suppliers, both internal to TfNSW and private suppliers, that make up a highly capable Transport Sector.

1.1 Purpose

The Technical Supplier Assurance Framework (this document) is designed to provide a clear and consistent approach to technical assurance, as it relates to suppliers throughout TfNSW and provides clarity of roles and responsibilities across the Transport Sector.

This document is primarily intended for use by Transport for NSW staff and our industry partners. Implementation of the Framework aims to deliver value for TfNSW, our customers, our industry partners and the people of NSW. Value is realised through:

- The appropriate balance of cost, risk and performance
- An outcomes-based focus to encourage innovation and continuous improvement
- Assurance and confidence that the transport and project outcomes will be achieved
- Recognition and application of technical competency, capability and systems

1.2 Scope

This Framework applies to all self-assured engineering services and products including sustainability in design, electromagnetic compatibility, fire and life safety, systems safety and human factors. It also applies to all phases of the asset life cycle.

This Framework applies to all self-assured technical supplier assurance arrangements for changes to the assets and services for which TfNSW are accountable.

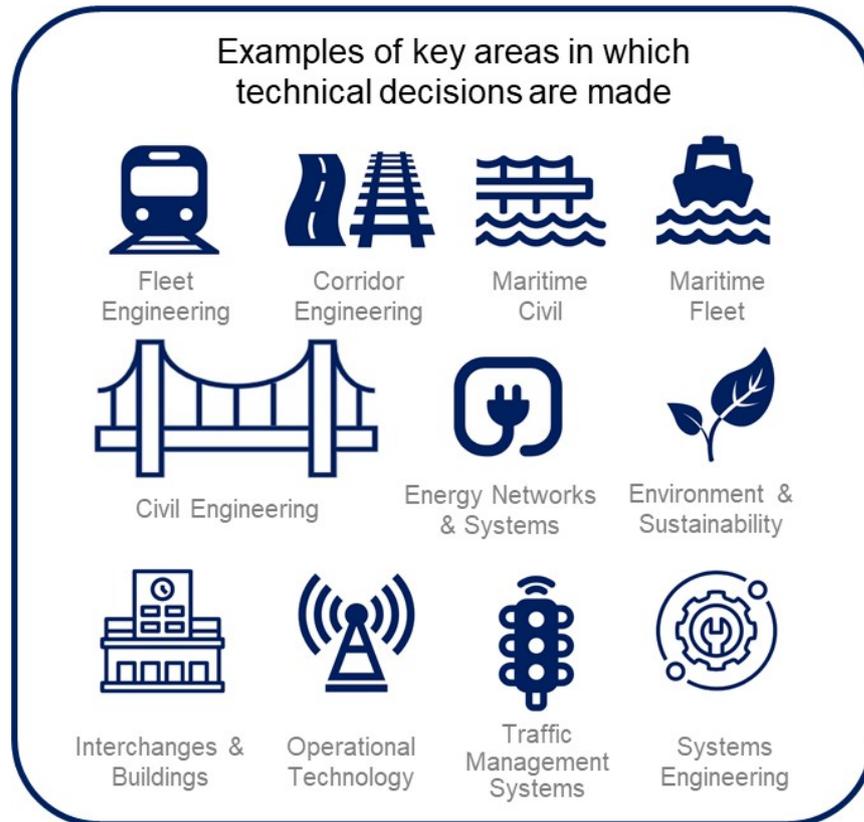


Figure 1: Examples of areas with technical decisions

A full list of engineering services within the scope of this framework are provided in TAO Engineering Services (TS 06197.3:1.0).

1.3 Related frameworks

The Technical Supplier Assurance Framework is one of five integrated asset related frameworks which work together to provide a consistent approach across the life cycle of TfNSW's assets and services (Figure 2).

The **Asset Management Framework** aligns TfNSW to the NSW Treasury Asset Management Policy and the national and international asset management standards.

Within the Asset Management Framework there is a commitment to review capability requirements periodically to evaluate the effectiveness of actions taken. The competency of external service providers will be verified as part of our supplier assurance and contract management processes.

The **Standards Management Framework** outlines the way transport standards are developed, managed and governed for application to assets used in the TfNSW business.

The **Configuration Management Framework** builds on the roles and responsibilities defined in the Asset Management Framework, particularly the asset custodian, and defines the authority required to make and recommend changes to our assets and services.

The **Technical Capability Framework** provides clarity on the roles within TfNSW for governance, oversight and application of technical authority.

This document, the Technical Supplier Assurance Framework, focuses on the supply of technical services and products to TfNSW and defines the assurance required to give justified confidence to the Asset Custodian that the technical aspects of an asset or service change have been appropriately considered and conducted.

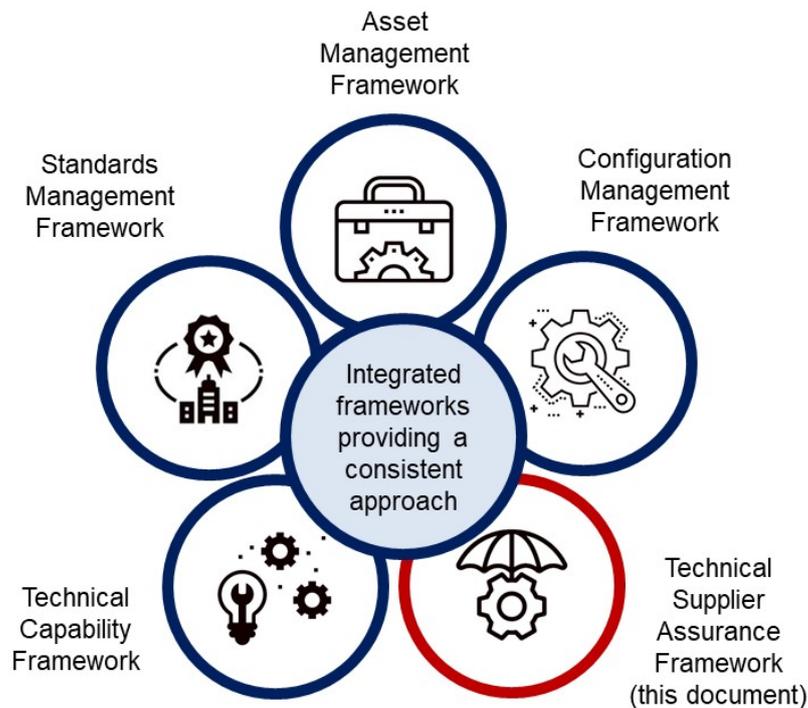


Figure 2: Relationship between the TfNSW Frameworks

2 Referenced documents

The following documents are cited in the text. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document applies.

Australian standards

AS/NZS ISO 19011:2019 Guidelines for auditing management systems

Transport for NSW standards

T MU AM 00003 ST Assurance and Governance Plan Requirements

T MU AM 00003 GU - Assurance and Governance Plan – Guidelines

TS 06197.1:1.0 TAO Authorisation Requirements

TS 06197.2:1.0 TAO Authorisation Scheme

TS 06197.3:1.0 TAO Engineering Services

TS 06197.4:1.0 TAO Engineering Services Matrix

Other referenced documents

TfNSW Asset Management Framework

TfNSW Configuration Management Framework Overview

TfNSW Standards Management Framework

TfNSW Technical Capability Framework

TPP 19-07 - NSW Treasury Asset Management Policy for the NSW Public Sector

3 Terms, definitions and abbreviations

AEO Authorised Engineering Organisation

Asset custodian The entity accountable for the end-to-end life cycle management and performance of assets on behalf of the asset owner to achieve agreed customer and community outcomes

Asset owner The entity that owns the asset

Asset steward The entity responsible for the management and performance of assets on behalf of the asset custodian for the required life cycle stage and duration of the partner relationship

Assurance A declaration intended to give confidence

Audit A systematic, independent and documented verification process of objectively obtaining and evaluating audit evidence to determine whether specified criteria are met (AS/NZS ISO 19011:2019)

Delivery partner An entity engaged to deliver products and services that may or may not be a TAO

Due diligence Risk based checks on a delegated party to provide a degree of oversight that the delegated delivery processes and assurance activities are being done to an appropriate standard

RASCI Defined roles and responsibilities for an outcome

- Responsible – performs the task
- Accountable – accountable for the outcome
- Support – assists those responsible
- Consulted – for advice and clarification
- Informed – of progress and affected by the outcome

Standard setter The entity accountable for TfNSW's transport-wide frameworks, strategies and standard as detailed in the Standards Management Framework (Technical Capability RASCI)

Technical assurance Confidence that the technical aspects of an asset or service change have been appropriately considered and conducted against a set of requirements to achieve an agreed outcome

TAO Technically Assured Organisation

Technical supplier A party, external or internal to TfNSW, providing a technical service related to TfNSW's assets and services

TfNSW Transport for NSW

4 Technical supplier assurance at TfNSW

Technical supplier assurance is the justified confidence, based on objective evidence, that the technical aspects of an asset or service change have been appropriately considered and conducted against a set of requirements to achieve an agreed outcome.

Technical suppliers, both within TfNSW and from the private sector, are key players in delivering our obligations in this space.

TfNSW uses its technical capability as an informed buyer, in conjunction with that which resides in the private sector, to deliver technical products and services. This act of delegating technical authority has inherent risks associated with it driving the requirement for an assurance framework within which governance / acceptance of those technical deliverables can be evidenced.

Technical supplier assurance is the process by which TfNSW gains justified confidence that technical risks inherent in our work are being managed in accordance with relevant risk and safety management frameworks (i.e. eliminated or minimised So Far As Is Reasonably Practicable). A larger, technically assured supply chain, increases our capacity to deliver the required portfolio of work. As shown in Figure 3 technical supplier assurance is in place to assure that risks are being managed so that:

- Assets can be acquired, operated, maintained, renewed and disposed in a safe manner;
- New and novel technologies are fit for purpose;
- Assets and services are integrated with other transport modes and places;
- Assets and services are delivered without unnecessary disruption or expense;
- Services will be safe, efficient and reliable;
- Transport network changes are sustainable and deliver the desired outcomes; and
- Transport network changes represent the best value for money for NSW.

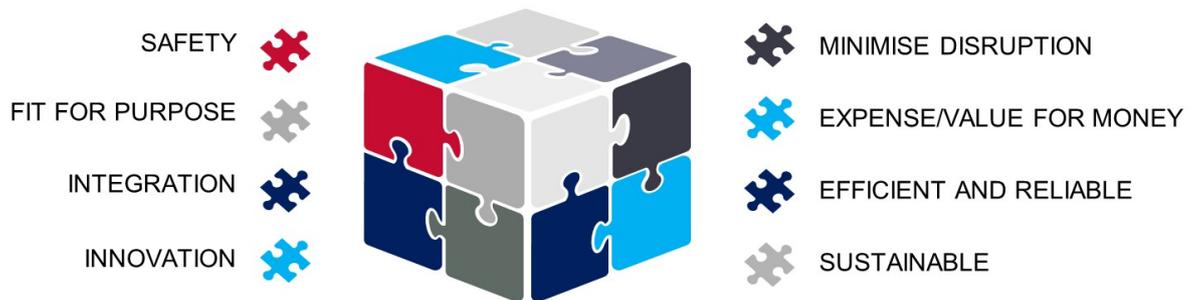


Figure 3: Outcomes from Technical Supplier Assurance

The greater the risk potential, the greater the assurance required to provide justified confidence on outcomes.

Through consistent application of this Framework, TfNSW will gain progressive confidence that planned transport outcomes are being delivered. Technical supplier assurance is designed to make sure that both project outcomes and transport whole-of-life outcomes are met.

TfNSW is accountable for the whole-of-life transport outcomes, whereas projects are responsible for the project outcome but the two need to be aligned to make sure that the overarching transport outcomes are achieved.

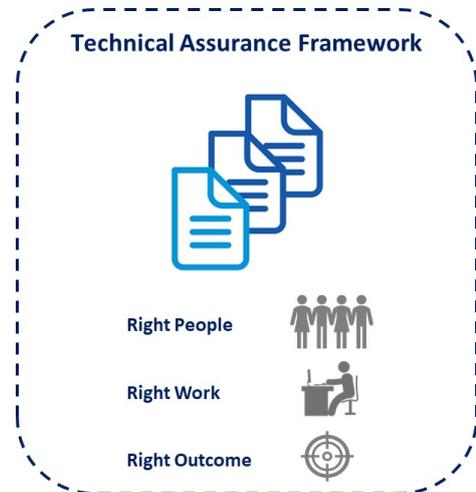
There are many different mechanisms and processes that can be used to deliver technical assurance. It is important to note that technical assurance for the outcome is not gained through activities that control a supplier and their product. Instead, justified confidence is gained through the knowledge that the appropriate technical capability is in place and that the systems and processes in use are fit for purpose. Activities that provide confidence include:

- Supplier authorisation
- Technical capability matching
- Configuration management
- Due diligence activities
- Systems audits
- Framework audits
- Gateway reviews

Both TfNSW and industry have a shared responsibility of getting the right outcomes for our customers. There are inherent risks in the work that we deliver and this Technical Supplier Assurance Framework and related requirements ensure the management and mitigation of those risks.

The way that technical supplier assurance mitigates these key risks is by proactively assuring that technically capable organisations and technically competent individuals work on our assets. The Technical Supplier Assurance framework provides justified confidence that TfNSW has the right people, doing the right work and that TfNSW will be provided with appropriate evidence that it is meeting its obligations (right outcome).

The Technically Assured Organisation scheme is the mechanism by which TfNSW achieves technical supplier assurance.



5 Guiding Principles

In order to deliver value for TfNSW, our customers, industry partners and the people of NSW the following guiding principles form the foundation of the Technical Supplier Assurance Framework and the associated requirements and models:



Guiding Principle 1

Allow for greater market capability and capacity



Guiding Principle 2

Present assurance commensurate to the risk and be scalable



Guiding Principle 3

Present an integrated assurance view that is mode agnostic



Guiding Principle 4

Provide confidence that the right level of assurance is provided when TfNSW or the supply chain are delivering



Guiding Principle 5

Enable growth and provide confidence in the transport sectors capability

6 Key roles

TfNSW contracts to suppliers for technical products and services. Key roles across technical supplier assurance include:

- **Asset owner:** the entity that owns the assets i.e. Transport for NSW or Transport Asset Holding Entity (TAHE)
- **Standard setter:** the entity accountable for the development and oversight of TfNSW's transport-wide frameworks, strategies and standards i.e. Asset Management Branch
- **Asset custodian:** the entity accountable for the end-to-end life cycle management and performance of assets (including asset condition, risk and reporting) on behalf of the asset owner to achieve agreed customer and community outcomes i.e. respective TfNSW divisions. The asset custodian is often referred to as the Client Division.
- **Asset steward:** the entity responsible for the management and performance of assets (including asset condition, risk and reporting) on behalf of the asset custodian for the required life cycle stage and duration of the partner relationship (may or may not be a TAO) i.e. projects, contracted operators and maintainers.
- **Delivery Partner:** the entity engaged to deliver to the client's requirements (may or may not be a TAO).
- **Authorised Engineering Organisation (AEO):** the entity that is authorised to provide self-assured engineering services to TfNSW and work on transport assets (may be internal or external to TfNSW) – Note: Any previous AEO migrates across to the TSA/TAO to the same equivalency without bias.
- **Technically Assured Organisation (TAO):** An entity that has a demonstrated technical capability and delivers that capability via an approved assurance framework.

7 Delegated Technical Authority and Assurance

Specialist skills are a feature of the transport sector which brings a need for complex subcontracting arrangements. Organisations in our supply chain range from constructors, large design houses and small specialised companies.

TfNSW currently has TAOs that deliver assured technical products and services across the life cycle of our assets.



Figure 4: TfNSW asset life cycle

TfNSW uses the three levels of assurance model to establish clear accountabilities at each of the levels (Figure 5). This model allows TfNSW to assess that its risk exposure is appropriately controlled and assure itself that the asset custodians, stewards and TAOs are capable of complying with relevant asset management, legislation and regulatory obligations and contractual requirements.



Figure 5: Three levels of assurance

Technical authority is delegated, based on proven skills and capability, from the asset owner to the standards setter who is accountable for setting standards for products and services and establishing the related assurance frameworks. In this case, Asset Management Branch as the standard setter, authorises an entity as a Technically Assured Organisation which assures that technically capable organisations and technically competent individuals work on transport assets. Through surveillance activities the standard setter provides assurance that the TAO is operating within their scope and that the technical and systems capability and competency systems still meet the TAO authorisation requirements.

The asset custodian, as an informed client, is accountable for defining the required product or service outcomes. The asset steward is accountable for delivery and the TAO or delivery partner is responsible for delivering the required outcome. In some cases the asset steward and delivery partner roles may be held by the same organisation. If technical decisions are being made on behalf of TfNSW then this organisation needs to be authorised as a TAO.

The TAO is accountable for delivering a fully self-assured product or service across their authorised technical capability area.

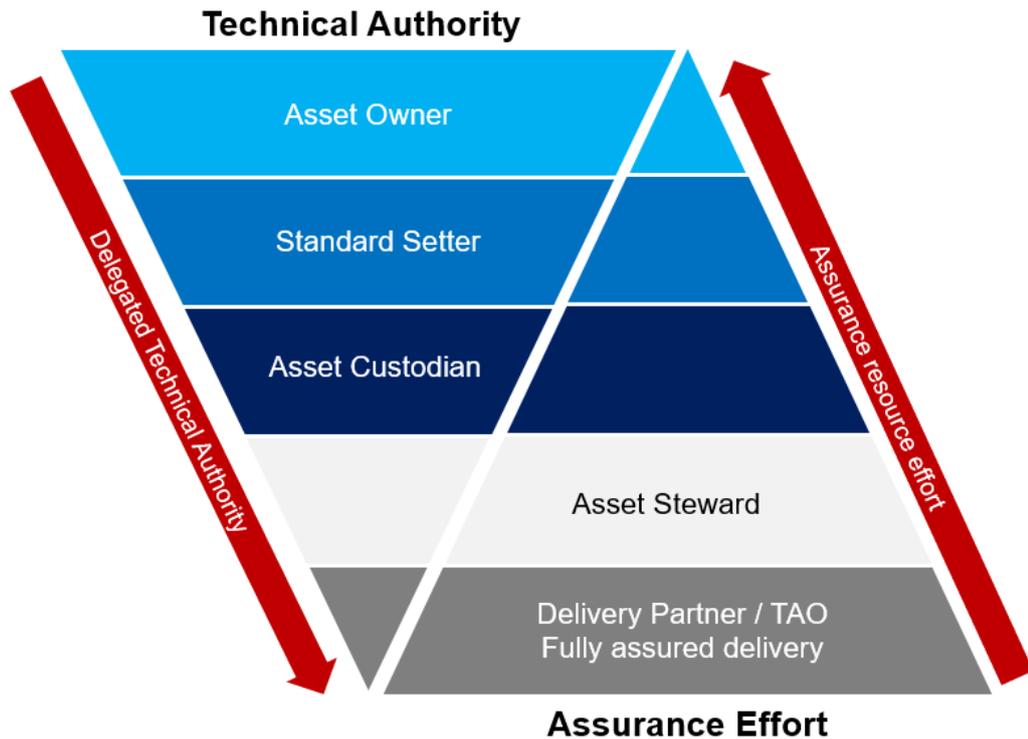


Figure 6: Technical authority and assurance

8 Key activities

There are three key phases for activities across technical supplier assurance:

Authorisation:

- Frameworks for authorisation and assurance
- Authorising TAOs
- Surveillance of TAOs

Life cycle delivery:

- Identify need for products and services
- Deliver products and services

Assurance:

- Self-assurance
- Risk based assurance and due diligence

8.1 Authorisation

Organisations in our supply chain range from constructors, through to large design houses and to small specialised companies. All organisations in our supply chain, including TfNSW, making technical decisions related to transport assets and services are required to be authorised.

The TAO authorisation assessment process, as detailed in the TAO Authorisation Scheme (TS 06197.2:1.0), outlines the pathway to qualify organisations to deliver assured technical work as Technically Assured Organisation for TfNSW.

The authorisation process includes an assessment of demonstrated and proven technical and systems capability, including competency systems.



The TAO authorisation requirements outline the necessary organisational systems, management capabilities and practices expected to be in place and are detailed in TAO Authorisation Requirements (TS 06197.1:1.0). TAO provides perpetual authorisation that is dependent on surveillance activities and performance. The activities of a TAO are monitored. Risk based surveillance assures that a TAO is operating within their scope and that their technical and systems capability including competency systems still meet the TAO authorisation requirements.

The issuing of authorisation does not detract from TfNSW's role in appropriately managing and assuring any contracts it enters into, its contractors and their activities.

An overview of the roles and responsibilities for the key authorisation activities is provided in the table below.

Table 1: Authorisation roles

High Level Activity	Asset Custodian	Asset Steward	TAO	Standard Setter	Procurement / Commercial
Set technical supplier assurance requirements	C	C	C	A/R	C
Develop and oversee Framework and Scheme	C	C	C	A/R	C
Apply for TAO designation	-	-	A/R	C	I
Authorise TAOs	I	I	I	A/R	I
Actively close non-conformances against the TAOs authorisation	I	I	A/R	C	I
Surveillance audits of TAOs	I	I	I	A/R	I

8.2 Life cycle delivery

The activities undertaken from demand/need through to operate and maintain and renew/dispose require the combined efforts of the asset custodian, asset steward and Technically Assured Organisation when delivering technical products and services.

Life cycle delivery takes place across the asset lifecycle and can take place across different phases of the life cycle at the same time – for example a new rail line could be installed at the same time as an old line is decommissioned.

As an informed client, the asset custodian defines the required product or service outcomes and works with the asset steward to ensure that the correct business requirements are defined to achieve the desired customer outcome, technical advice may be provided by TAOs during these development phases. TAOs are responsible for delivering self-assured engineering products and services within their authorised technical capability area.

The key roles are shown across life cycle delivery in the V life cycle delivery figure below.

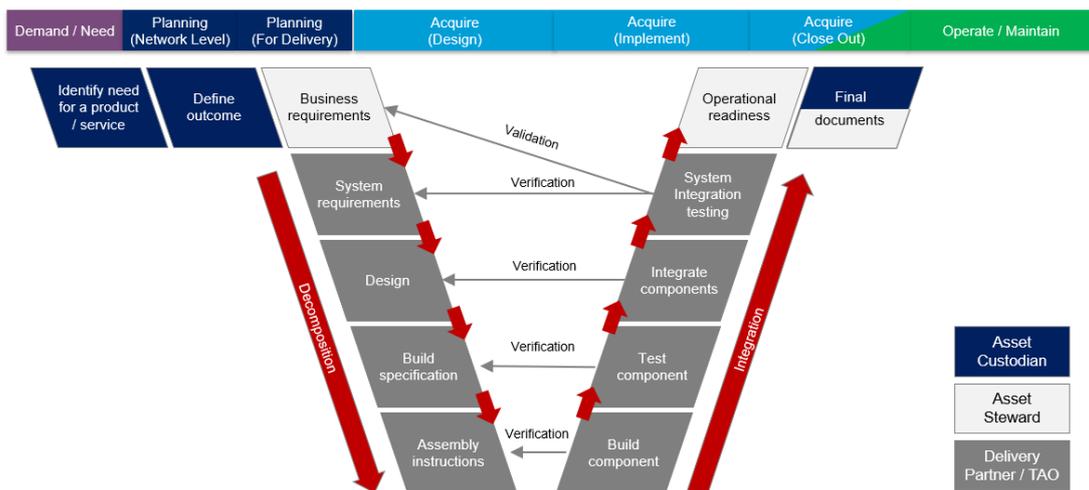


Figure 7: Key roles in V life cycle delivery

Depending on the work being delivered the asset custodian and/or asset steward decide on the appropriate delivery method for the project or program of works. TfNSW can choose to deliver products and services itself, under its own TAO authorisation or it can decide to obtain services from the private sector. Any entity delivering self-assured technical services for lifecycle delivery is required to be authorised as a TAO. When procuring services from the private sector there are three contracting scenarios that provide the required TAO coverage:

- **Single TAO coverage:** used for smaller contracts where TfNSW receives fully self-assured services from one TAO.
- **Multi-layered TAO coverage:** for larger contracts where TfNSW receives fully self-assured services from a TAO who in turn sub-contracts to another TAO and / or non TAO organisations. In this scenario where a non TAO is contracted the work must be

assured under the engaging TAOs system and fall within the engineering scope of their authorisation.

System integration brings together component elements into one system, ensuring that the elements function together as a complete system, and also ensuring that the new system integrates within the existing system of systems. Systems integration is a capability that is contracted to an entity with the relevant authorisation.

In the multi-layered TAO scenario it is expected that the entity engaged by TfNSW hold authorisation in engineering management services which enables delivery of project engineering management including managing design/construction/delivery resources, directing people and organisations in delivering to the engineering processes.

- Specialist TAO coverage:** generally used where the majority of the work is not rail. The procurement contract is with a non TAO to provide project managing services for rail component only. Technical services and assurance, where required, are sub-contracted to a TAO who is accountable for the provision and self-assurance of the technical products and services.

In each scenario a TAO can only provide self-assured services within the scope of their authorisation – as defined in the TAO Engineering Services Matrix (TS 06197.4:1.0).

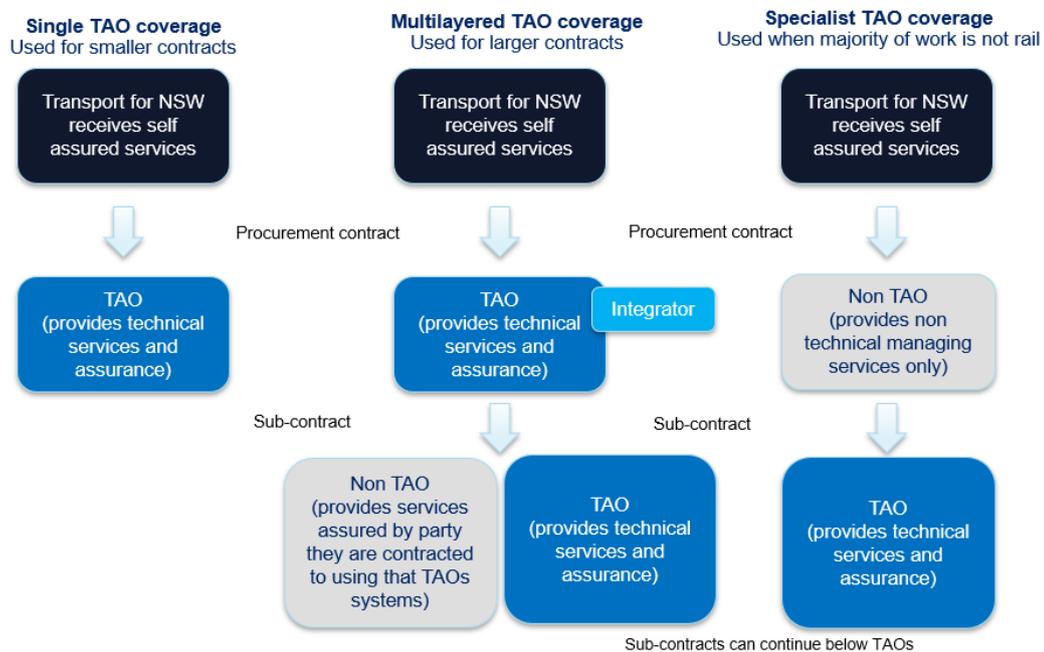


Figure 8: Contracting Scenarios

During lifecycle delivery TAOs are accountable for the following activities:

- Stakeholder engagement and management necessary to deliver the products / services
- Coordinating delivery of the outcomes with the next user and end user of the work

- Assuring their own engineering services or products as well as any other suppliers for which they are accountable
- Compliance with TfNSW standards, policies, specifications, legal frameworks and safety requirements

An overview of the key life cycle delivery activities, roles and responsibilities for the provision of a technical product or service is provided in the table below.

Table 2: Life cycle delivery roles

High Level Activity	Asset Custodian	Asset Steward	TAO	Standard Setter	Procurement / Commercial
Identify stakeholder and user needs	A/R	R	R	C	S
Define capability requirements and options	A/R	R	R	C	S
Feasibility studies	A/R	R	R	C	S
System requirements	A	R	R	C	S
Concept or reference design	A	C	R	C	S
Design	A	C	R	C	S
Fabrication and manufacture	A	C	R	C	S
Construction and installation	A	C	R	C	S
Inspection and test	A	C	R	C	S
Commissioning and handover	A	C	R	C	S
Operations and maintenance	A	C	R	R	S
Decommission and disposal	A	C	R	C	S

8.3 Assurance across lifecycle delivery

Technical assurance is conducted across all phases of life cycle delivery, from demand / need identification through to operate / maintain and renew / dispose.

A risk-based approach to assurance is applied where governance, assurance and due diligence is scalable to the size, novelty, complexity and risk of the projects and services being delivered. This is taken into consideration in development of the Assurance and Governance Plan by the asset steward which outlines assurance requirements specific to delivery of a project / service. Refer to Assurance and Governance Plan Requirements (T MU AM 00003 ST) and Assurance and Governance Plan – Guidelines (T MU AM 00003 GU) for further details.

The asset steward brings this structure into play as they establish and deliver the assurance approach for project or program of works. Figure 9 below shows how the risk assessment flows into the contract and due diligence activities.

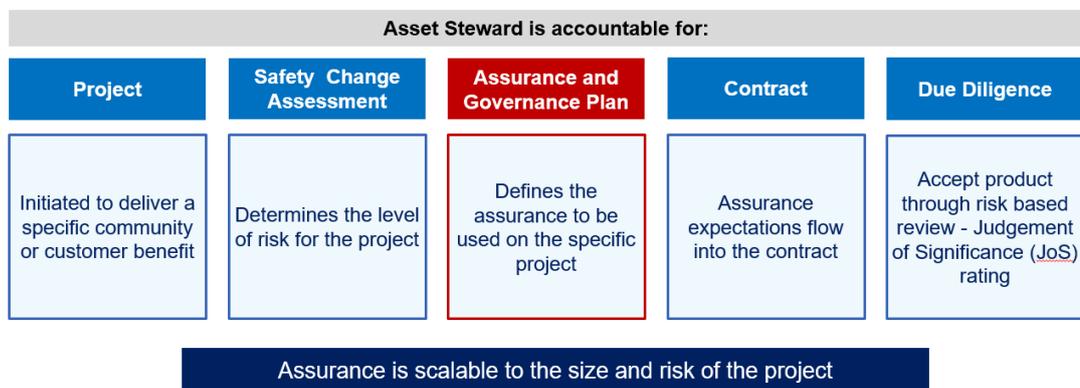


Figure 9: Key assurance activities during lifecycle delivery

The TAO / delivery partner is accountable for delivering a fully assured product or service, in line with their authorised capability.

The asset steward provides a level of independent risk-based validation and assurance based on the size and risk of the specific project.

The asset custodian provides a level of risk-based due diligence and assurance that overall outcomes have been met. These layers of assurance are shown below in Figure 10.

In addition to this the standard setter provides assurance that the framework, standards and controls have been provided and implemented. Ultimately, the asset owner verifies that transport obligations have been met and customer outcomes have been delivered.

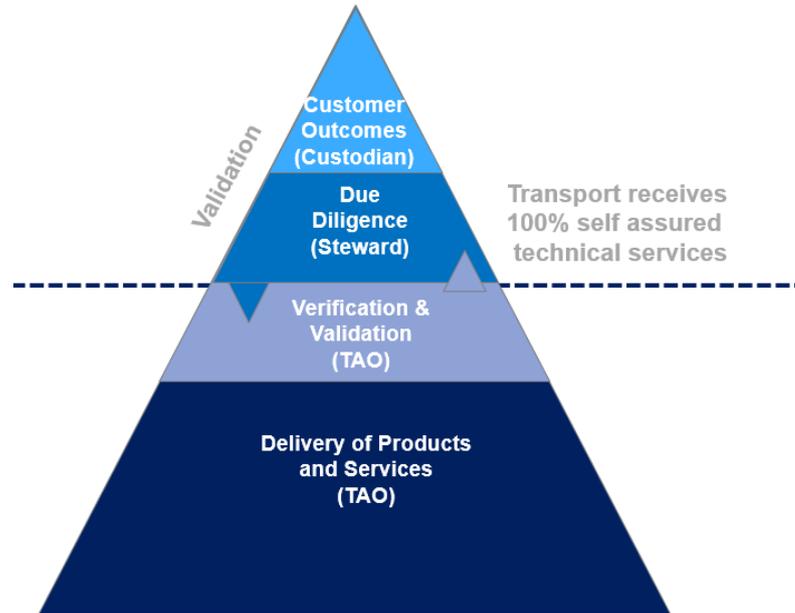


Figure 10: Key assurance activities during lifecycle delivery

An overview of the roles and responsibilities for the assurance activities is provided below.

Table 3: Assurance Roles

High Level Activity	Asset Custodian	Asset Steward	TAO	Standard Setter	Procurement / Commercial
Implement the Supplier Assurance Policy / Framework	A	R	R	S	S
Define technical capability for project	A	R	-	-	-
Include technical capability check in procurement requirements	-	A	-	-	R
Include requirements clauses in contract	-	A	-	-	R
Provide self-assured delivery	-	-	A/R	-	-
Check technical capability during project	A	R	-	-	-

High Level Activity	Asset Custodian	Asset Steward	TAO	Standard Setter	Procurement / Commercial
Engineering diligence reviews / design review	A	R	-	-	-
Inspection and test completion review	A	R	-	-	-
Principal requirements and user requirements validation	A	R	-	-	-
Principal's review for compliance with the contract	A	R	-	-	S
Sampling, monitoring or audits that test TAO system deployment	A	R	-	S	-