



TS 00018:2.0
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

This framework, the Technical Supplier Assurance (TSA) Framework document, outlines the arrangements for the development, implementation, and management of technical outcomes for transport assets. The TSA Framework focuses on the supply of technical services and products to TfNSW and defines the assurance required to give justified confidence that the technical aspects of an asset or service change have been appropriately considered and conducted.

The intent of the TSA Framework is to provide assurance that technically capable organisations and technically competent individuals are working on our assets. The TSA Framework is underpinned by the Technically Assured Organisation (TAO) Scheme which recognises organisations technical capability. Entities that seek to provide self-assured engineering and asset services to Transport are required to 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, Transport for NSW (TfNSW) has an overarching obligation to achieve the best possible outcome for our customers, taxpayers and the State.

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 provide clear 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 technical supplier assurance arrangements for changes to the assets and services for which TfNSW are accountable. It's use is mandatory across Transport and TAHE owned assets in the Heavy Rail, Light Rail and Metro modes. It is used on a selected project, or activity basis, for other modes of Transport including maritime.

The Framework applies to all self-assured engineering services and products and the scope of services include the full range of engineering disciplines alongside 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.

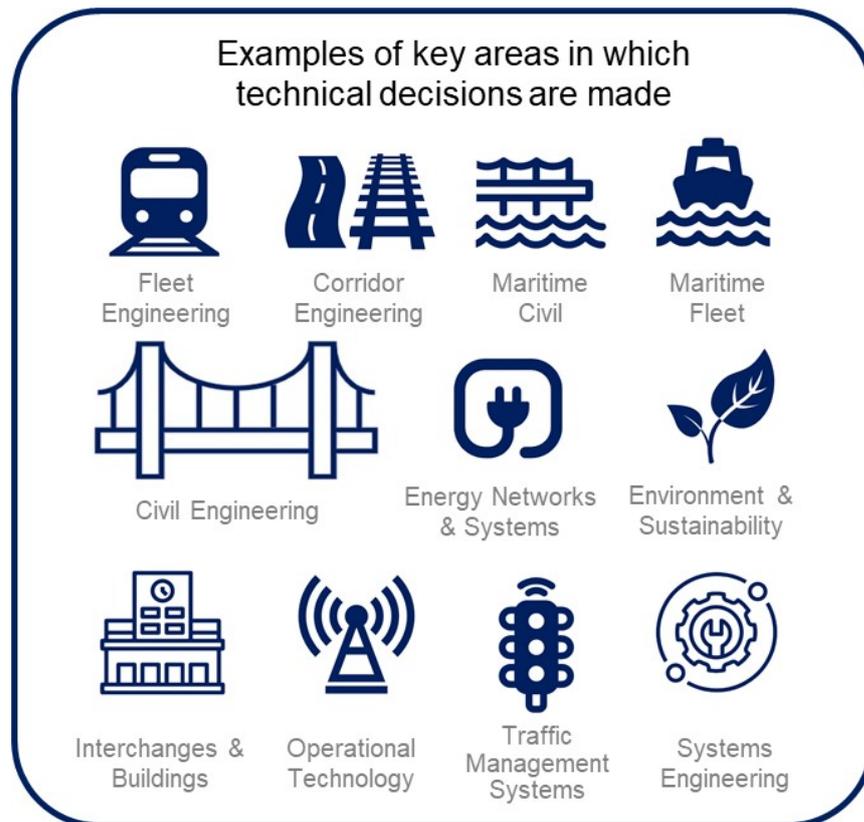


Figure 1: Examples of areas with technical decisions

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

1.3 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.

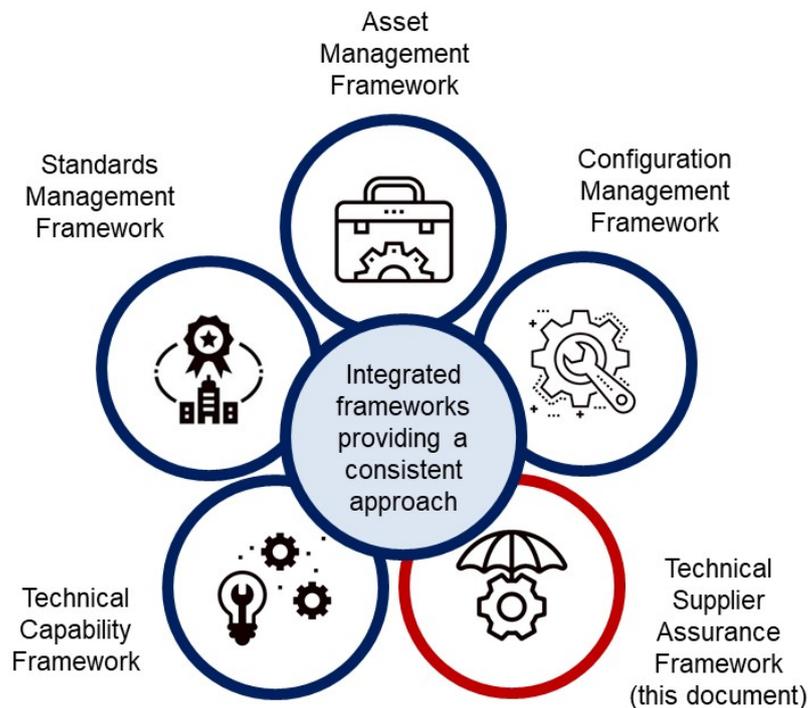


Figure 2: Relationship between the TfNSW Frameworks

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 TAO Authorisation Requirements

TS 06197.2 TAO Authorisation Scheme

TS 06197.3 TAO Engineering Services

TS 06197.4 TAO Engineering Services Matrix

TS 06197.5 TAO Engineering Services Matrix – Maritime

T MU AM 06006 ST Systems Engineering standard

T MU AM 06014 GU Guide to Systems Integration

T MU MD 00014 GU Multi-Discipline Rail Infrastructure Design Management Guide

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

ISO15288 Transport's Systems Engineering suite of standards

3 Terms, definitions and abbreviations

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

Asset owner The entity that is the owner of the asset

Asset steward The entity given the responsibility by an asset custodian to oversee part of the life cycle process for an asset

Assurance A set of structured and planned activities conducted through the asset life cycle providing progressive justified confidence that objectives are being achieved and that the asset is or will be fit for purpose

Audit Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled

Delivery partner An entity engaged by Transport to deliver technical products and services

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.

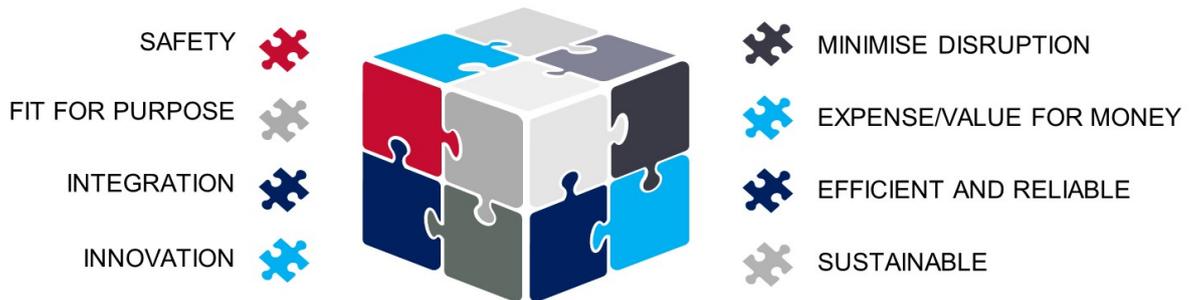


Figure 3: Outcomes from Technical Supplier Assurance

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.

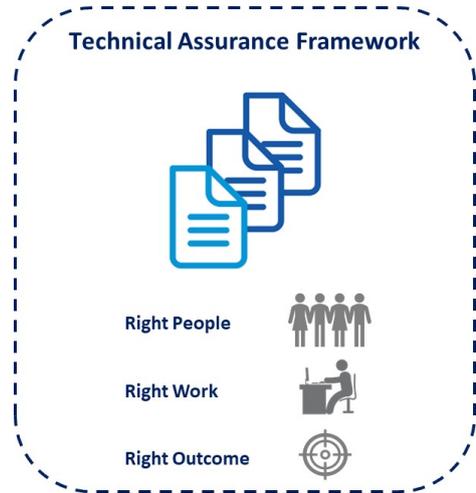
There are many different mechanisms and processes that can be used to deliver technical assurance. It is important to note that technical assurance for the outcome is not gained through activities that control a supplier and their product. Instead, justified confidence is gained through the knowledge 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 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). Includes activities associated with capital projects as well as operations and maintenance phase of the asset lifecycle.
- **Technically Assured Organisation (TAO):** 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). 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 and large design houses to 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 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 if the scope of activity is covered by the TAO Scheme (TS 06197.2).

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

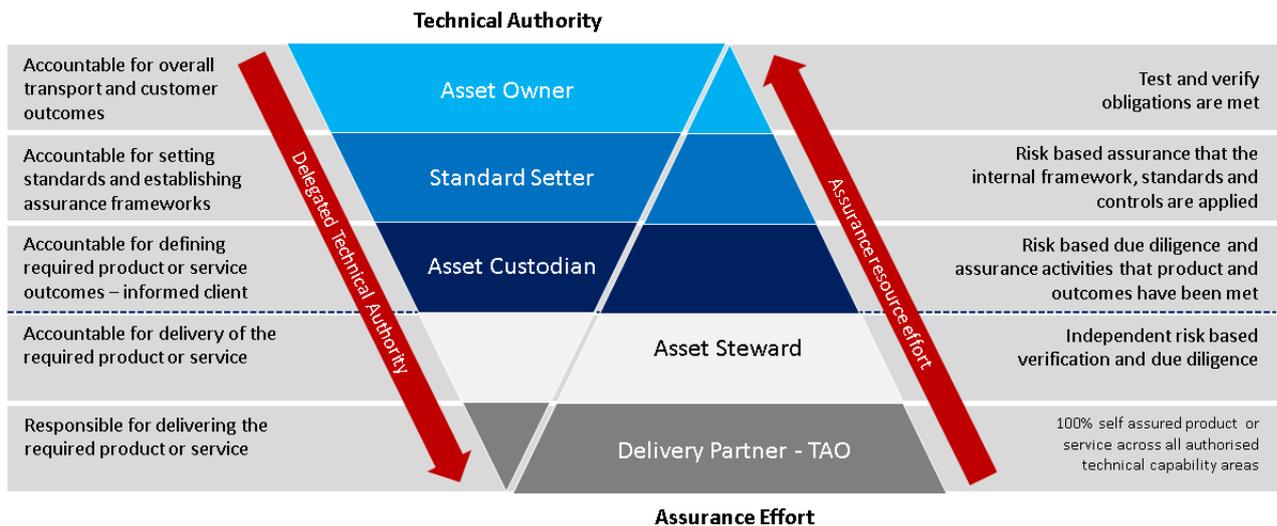


Figure 6: Technical authority and assurance

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. This is mandatory for rail, and identified for specific projects across other modes of Transport including maritime.

The TAO authorisation assessment process, as detailed in the TAO Authorisation Scheme (TS 06197.2), 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). 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. TfNSW remains accountable throughout the process for achieving appropriate project outcomes for the people of NSW.

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.

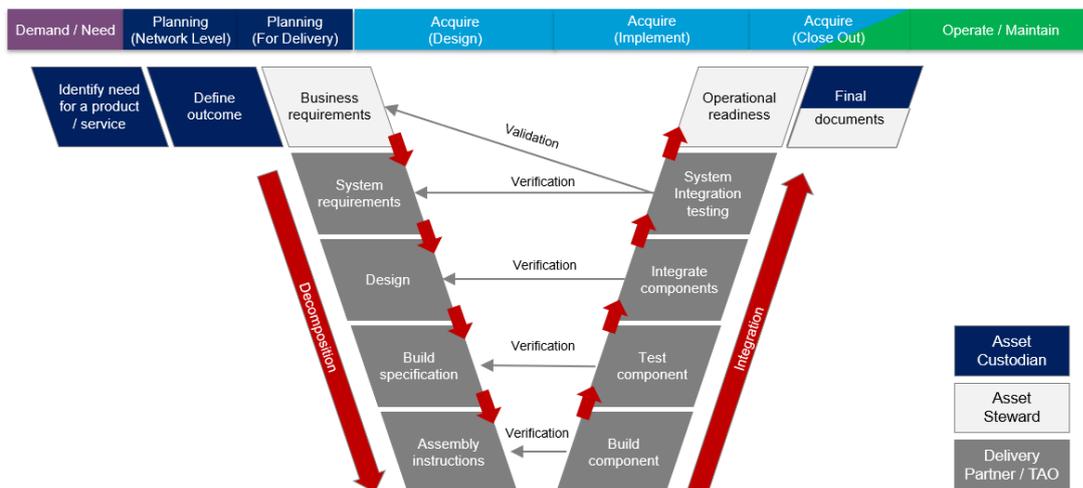


Figure 7: Key roles in V life cycle delivery

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 another party be they a private or public entity. Any entity delivering self-assured technical services for lifecycle delivery is required to be authorised as a TAO. Suitable arrangements are made for engaging the TAO, depending on whether they are a TfNSW, private sector or public sector entity. 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. 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.

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). These scenarios are also applicable, but may be supported by different arrangements, when services are being delivered by a TfNSW or public sector entity as they contribute to the overall assurance approach. Refer to Figure 8.

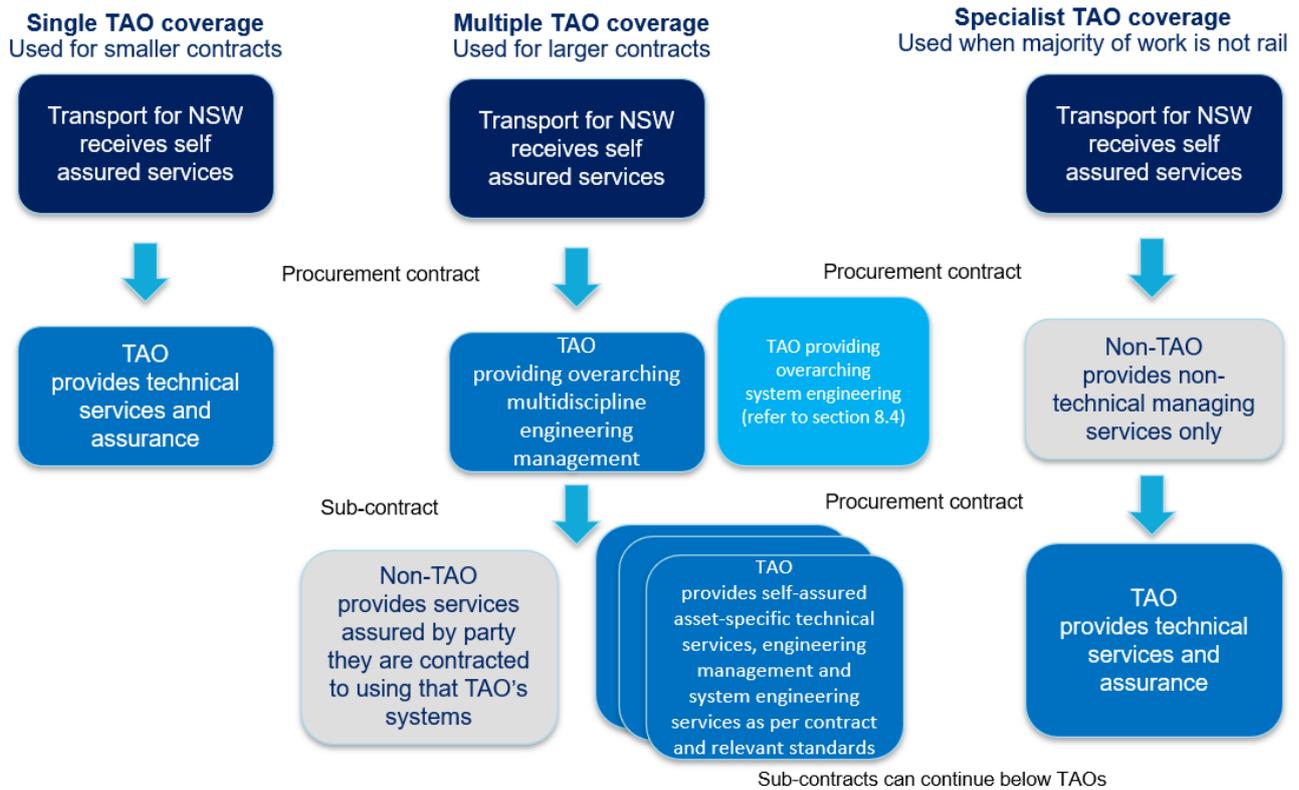


Figure 8: Contracting Scenarios

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 including technical interfacing and integration as specified in the contract
- 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. The accountabilities referred to below reflect technical activities not financial delegations

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 | I | A | R | C | S |
| Design | C | A | R | C | S |
| Fabrication and manufacture | C | A | R | C | S |
| Construction and installation | C | A | R | C | S |
| Technical system interfacing and integration | C | A | R | C | S |
| Inspection and test | C | A | R | C | S |
| Business integration | A/R | R | C | C | D |
| Commissioning and handover | C | A | R | C | S |
| Operations and maintenance | C | A | R | R | S |
| Decommission and disposal | C | A | 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. It is a shared responsibility covering all parties involved be they private or public sector entities.

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 00002 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.

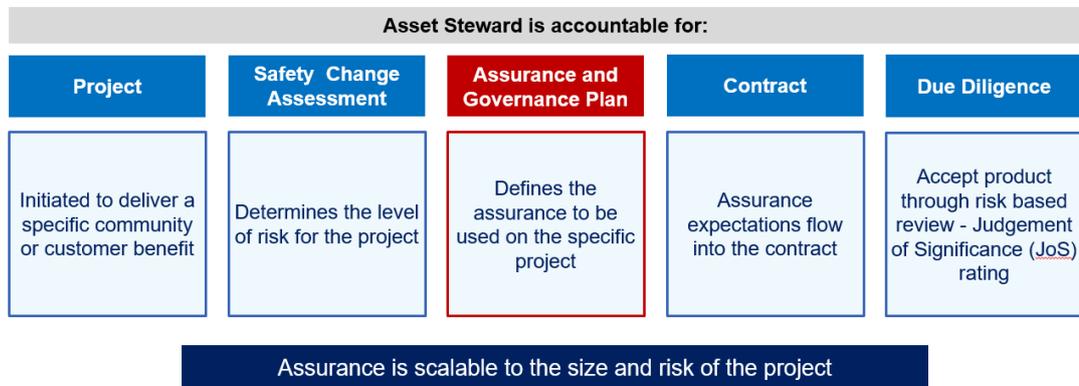


Figure 9: Key assurance activities during lifecycle delivery

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

The proposed integrated Assurance and Governance Plan (AGP) that is required when there are program of works with many projects, each with their individual AGP. Such plans prepared and aligned with the prescribed assurance approach, contracting and delivery scenario (see section 8.2 for details) and the delivery team composition and structure. Evidence of the progressive delivery and assurance against the plan are made available as detailed in the delivery/project plan or at request. The exact format and content of this plan may vary depending on the project.

Figure 6 illustrates that the asset steward and asset custodian undertake risk-based assurance activities (see Figure 6 above). The asset steward undertakes assurance that the requirements of the project are met while the asset custodian’s assurance focuses on achievement of the expected business and customer outcome. These activities are based on the size and risk of the specific project and take into account the assurance, verification, and validation arrangements specific to the project. These layers of assurance are also 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.

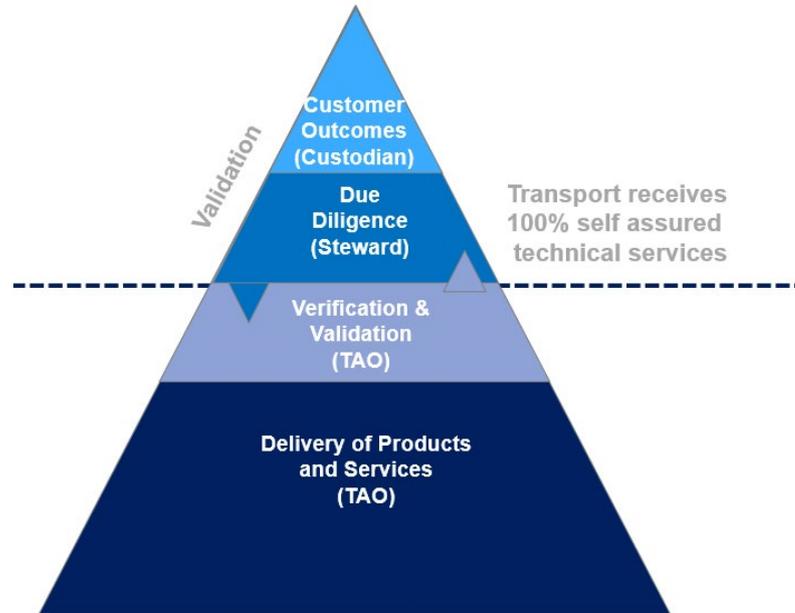


Figure 10: Key assurance activities during lifecycle delivery

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 | - |

8.4 System integration and assurance

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 required to be conducted by an entity with the relevant authorisation. It is prevalent in projects where multiple TAOs take accountability for delivery of different technical services.

System integration is recognised within international and TfNSW standards as a dedicated engineering practice. It includes distinct activities, for example within project management, procurement, risk, system safety assurance and others, that should not be duplicated, or conflict with other management activities of the project's overall organisation. This is a recognised engineering practice referenced in both international and Transport standards.

Regardless of the legal, contractual, or organisational structure of the delivering entity, or entities (asset steward or delivery partner) the typical functions on engineering projects are:

- Business/network integration.
- Project/program management/Integration delivering project management functions.
- Engineering Management capability that is expected to be deployed at every necessary level of the project/contract organisational breakdown structure (OBS) to ensure coordination.

- Technical and system safety integration and other system engineering functions that look after all aspects of the internal and external product or service interfacing and deliver the integrated assurance including operation safety argument. Technical system integration makes relevant technical decisions and brings together component elements into one system, ensuring that the elements function together as a complete system, and ensuring that the new system integrates within the existing system of systems.
- Technical (specialist) asset-specific function providing asset-specific technical authority in design, construction, integration, testing, commissioning, maintenance, dispose and renew activities.

The above is typical for projects /contractual arrangements that involve engineering or technical decisions. Activity allocation and distribution of activities depends on the nature and composition of the work product or service being provided including its system elements and configuration. This can impact work packages and contract structure.

Business and network integration is conducted within Transport. Project and program management functions can be carried out by the asset steward or the delivery partner, which may or may not be a TAO. Engineering management, technical integration, system safety integration, system engineering and technical asset specific activities are delivered by TAOs with appropriate authorisation in each area. The below diagram (Figure 9) shows the layers of integration expected for Transport project delivery.

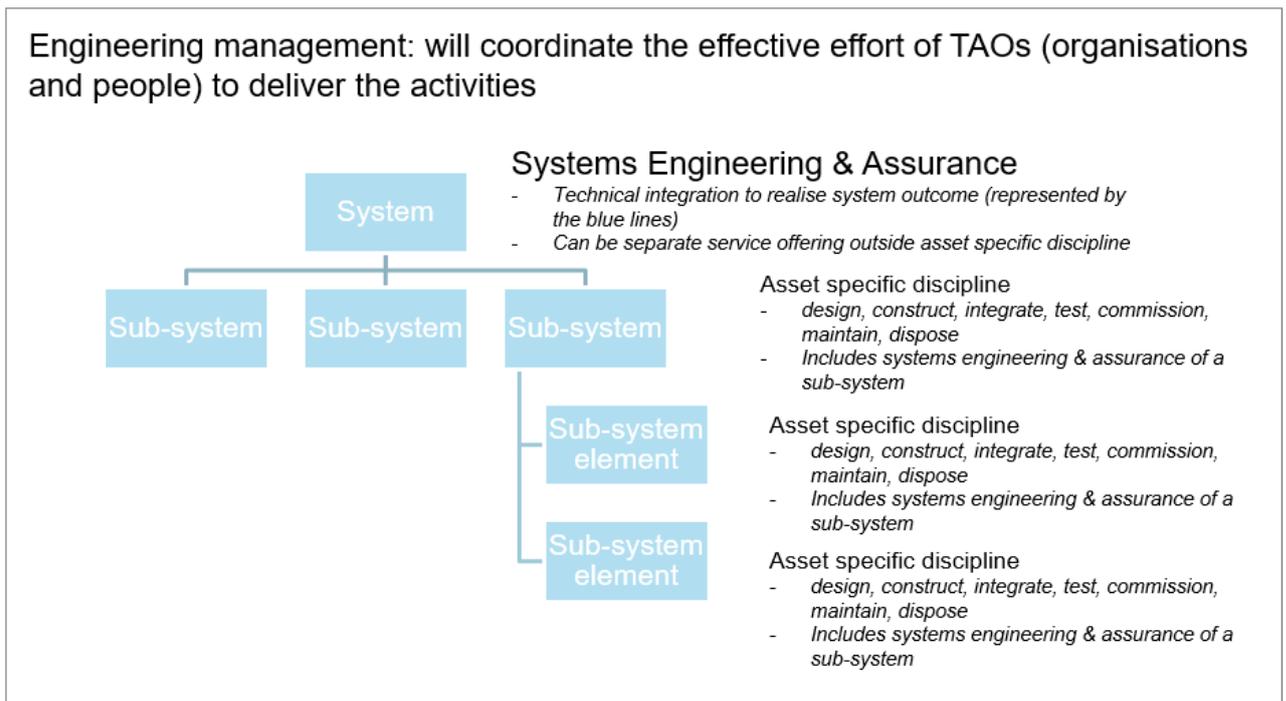


Figure 9: System Breakdown Structure and relevant TAO coverage

The contracting and delivery scenarios consider the necessary functions to ensure they are in place as appropriate for the scope of works and delivery method.

Section 8.2 elaborates on various delivery structures that involve suppliers including TAOs. The delivery methodology and assurance approach are realised via the creation within the project of all the necessary roles and functions as guided by good industry practice and Transport standards for an engineering organisation. The work or product breakdown structure also needs to be taken into consideration and may influence the contract model and project organisation breakdown structure.

A TAO is recognised as being capable to deliver the self-assured product or service using its own authorised engineering management system that deploys all necessary capabilities and roles including system integration and engineering management of their own scope of works.

A TAO with the explicit system integration and other necessary system engineering capabilities authorisation and a TAO with suitable engineering management authorisation as explained in the TAO Engineering Services (TS 06197.3) sections 8.1 and 8.2 and specified in the TAO Engineering Services Matrix (TS 06197.4 and TS 06197.5) need to be engaged when the scope of work is split across multiple suppliers including TAOs and non-TAOs.

It is preferred that both systems engineering and engineering management capability is held by the party that has signed an agreement or contract with Transport. The same capability is expected to be held if this role is being undertaken by an internal Transport entity. In all instances the relevant authorisation is required. It is also possible that a systems integrator is employed either by Transport or another contractor where multiple parties are involved.

Such systems engineering / integration and assurance service providers hold the necessary TAO authorisation in relation to the overarching technical integration of the system/product, and directs scope management between packages, including management of emerging properties, while TAOs with asset-specific scope of works assure and integrate their own work packages.