

14 December 2022

# Transport for NSW Technically Assured Organisation (TAO) Industry Briefing





## Acknowledgement of Country

---

Transport pays respect to Elders past and present and recognises and celebrates the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

---



# Housekeeping

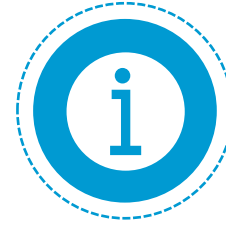


Raise your hand

Camera off



Q&A is available  
after the  
presentation



Information  
session

Pack will be  
circulated

# TAO Annual Review

<b>1</b>	<b>Journey so far</b>	<b>John Hardwick</b>
<b>2</b>	<b>What has changed</b>	<b>Kim Appleby</b>
<b>3</b>	<b>Strategic Priorities</b>	<b>Kim Appleby</b>
<b>4</b>	<b>Q&amp;A</b>	<b>Jennifer Duxbury</b>

# The journey so far

Where we have come from and why we are here

## **John Hardwick**

Executive Director Asset Management  
Safety Environment and Regulation  
Transport for NSW



# Purpose

## Annual Industry Briefing on TAO

---

**Last year we committed to review the TSA Framework and TAO scheme on an annual basis**

**Today we are delivering on that commitment.**

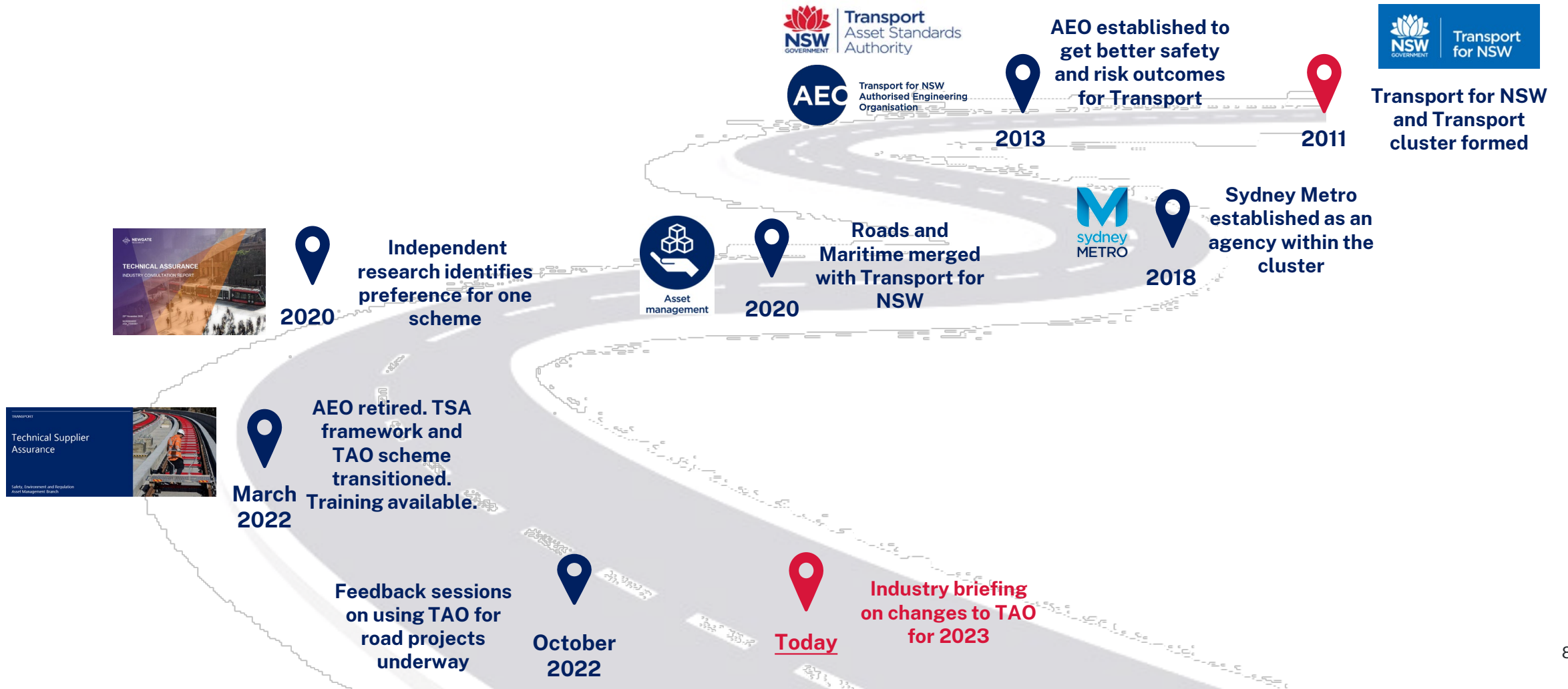
- Report back on progress against our priorities for 2022
- Provide an overview of the changes to the TSA Framework and the TAO Scheme being released
- Provide a preview of the potential areas for improvement in 2023





# Where have we come from

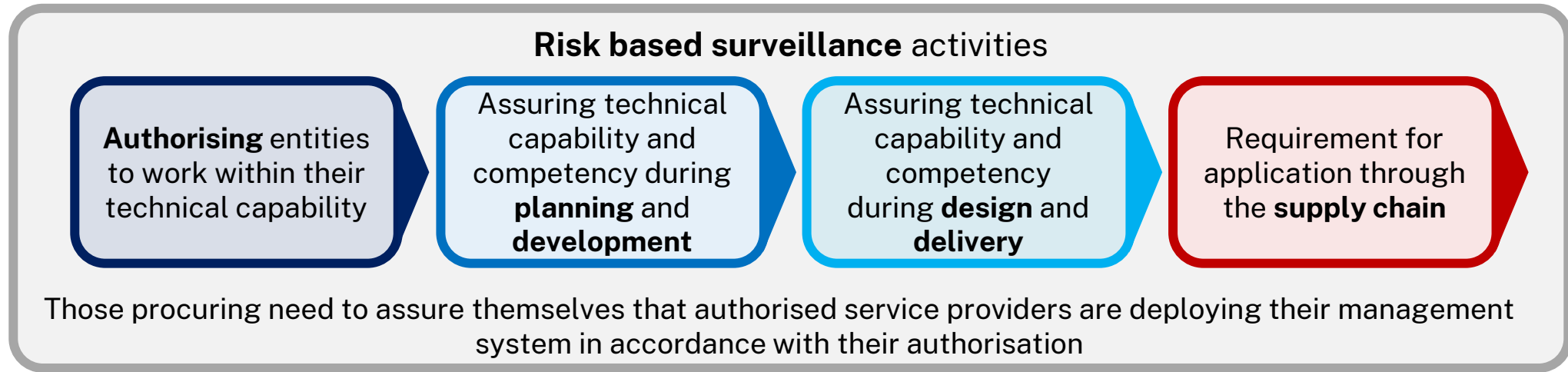
## The journey from AEO to TAO





# Assuring technical capability

Provide assurance that technically capable organisations and technically competent individuals develop, procure and work on our assets



# TSA scheme benefits

## For Transport and industry

**ASSURANCE**  
Providing a standardised risk based framework for due diligence rather than certifying every activity  
Reduces the effort and administrative cost for Transport and Industry

**RISK MANAGEMENT**  
Places risk management with the competent party



**ACCOUNTABILITY**  
Industry are accountable for integration and technical outcomes which streamlines project and procurement processes

**CONSISTENCY**  
Consistent expectations both across Transport and for industry when working with Transport

# Industry feedback

The feedback we got from across industry and Transport informed five pillars of change which have informed our priorities.

## 1 Approach and Sample

1<sup>st</sup> Oct – 6<sup>th</sup> Nov 2020

28 Participating Organisations in total

	INTERVIEW	FORUM
Design	5	8
Design & Construct	4	1
Construct	4	6
Operate/ Maintain	2	2
Surveyor/Consultant	1	1
<b>TOTAL ORGANISATIONS</b> (6 TOOK PART IN BOTH PHASES)	<b>16</b>	<b>18</b>

## 2 Key findings from Industry Research

- 1 Multiple, disjointed assurance schemes and panels
- 2 Challenging and costly pre-qualification processes (AEO)
- 3 Issues with scheme translation to project implementation
- 4 Requirements that are too prescriptive or not scalable
- 5 Compliance checking rather than recognition of value-adding

## 3 Five pillars of change

Change Area	Principle 1: Clear Accountability	Principle 2: Assurance arrangements	Principle 3: Technical capability and competency checks	Principle 4: Early Collaboration	Principle 5: Held to Account
Programme Solutions	Principle/ Specialist relationship Specialist AEO pathway Accountabilities of integrators	Contract align to supplier assurance requirements	Standard interpretation of the matrix Manage competence in the supply chain Simplify the matrix	Early collaboration: Supply chain involved in reviews	Performance Scorecard: All parties understand common goals Development of trust
Programme Changes	Releasing a framework and a high level BASU that outlines the informed client vs supplier assurance expectations  Classification of the Systems Integrator capability and proposing a 3 or 4 tiered approach	Retain the AEO Capability check in the procurement process but make it easier by creating standard matrix coverage for different types of projects	Simplifying the Matrix by: 1. removing front end asset lifecycle to below the line 2. updating wording and 3. consolidating some sub-disciplines  Clarifying the competency requirements by: 1. rewording requirements 2. updating documentation and 3. merging some requirements.	Looking for consistency across the design review process	Strengthen use of the performance side of the model which is already documented but not often used by:  1. making AEO Maturity rating flexible and agile 2. offering a way to record AEO performance 3. Strengthening of use of performance information as an input into the audit program

# What has changed?

Activities over the last year have resulted in a range of changes to our focus and our documentation

Kim Appleby

Director Supplier Assurance & Engagement  
Safety Environment and Regulation  
Transport For NSW

# Current Focus

Over the past two years our focus has been on getting supplier assurance right for rail and looking for benefits across other modes

---



**Listening to feedback**  
**Collaborative  
development of solutions**



**New and improved  
framework for Rail**  
**Transition to TAO in  
2022**



**Considering use of TAO  
for roads - feedback  
sessions underway**  
**Pilot with WHT/SHT**

# What has been achieved in 2022?

We have made significant progress

1 **Transfer of AEOs to TAOs**

An icon showing a document with a pencil and a checklist, symbolizing the transfer of AEOs to TAOs.

2 **Updates to the online portal to support TAO**

An icon showing a square with arrows pointing outwards, symbolizing updates or expansion.

3 **TAO Training Roll Out**

An icon showing a star, a person, and a checkmark, symbolizing training and success.

4 **Automation of surveillance process**

An icon showing a computer screen with a key, an eye, and a password field, symbolizing automation and surveillance.

5 **Updates for systems integration**

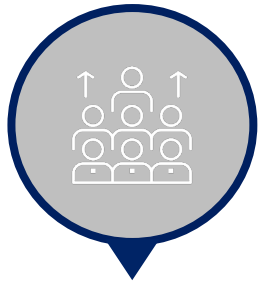
An icon showing a lightbulb and gears, symbolizing integration and innovation.

6 **Matrix recalibration & design sprint**

An icon showing three people and a checkmark, symbolizing collaboration and design sprint.

# Updated TSA Framework

A review of the TSA Framework has been completed this year and amendments to the TSA Framework include:



Modes  
confirmed



Delegated  
technical  
authority



Contracting  
scenarios



Systems  
Engineering  
& Integration



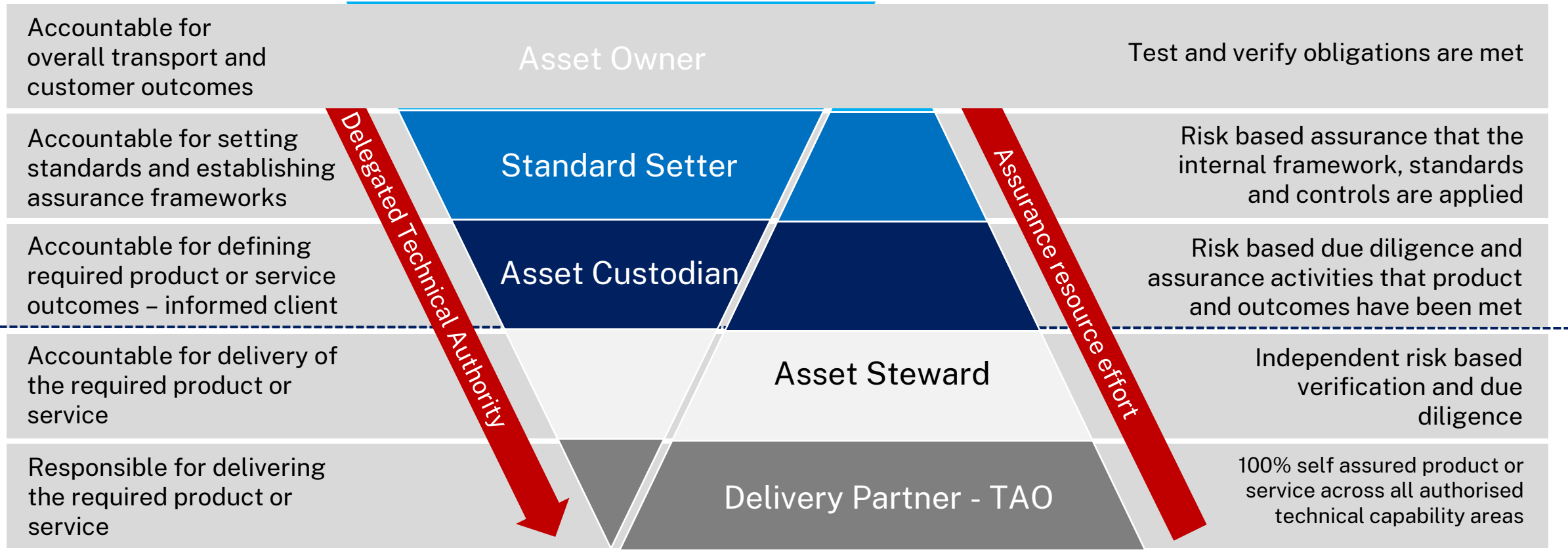
Integrated  
delivery &  
assurance plan



# Levels of assurance

Reference to TAO has been removed from Asset Steward level

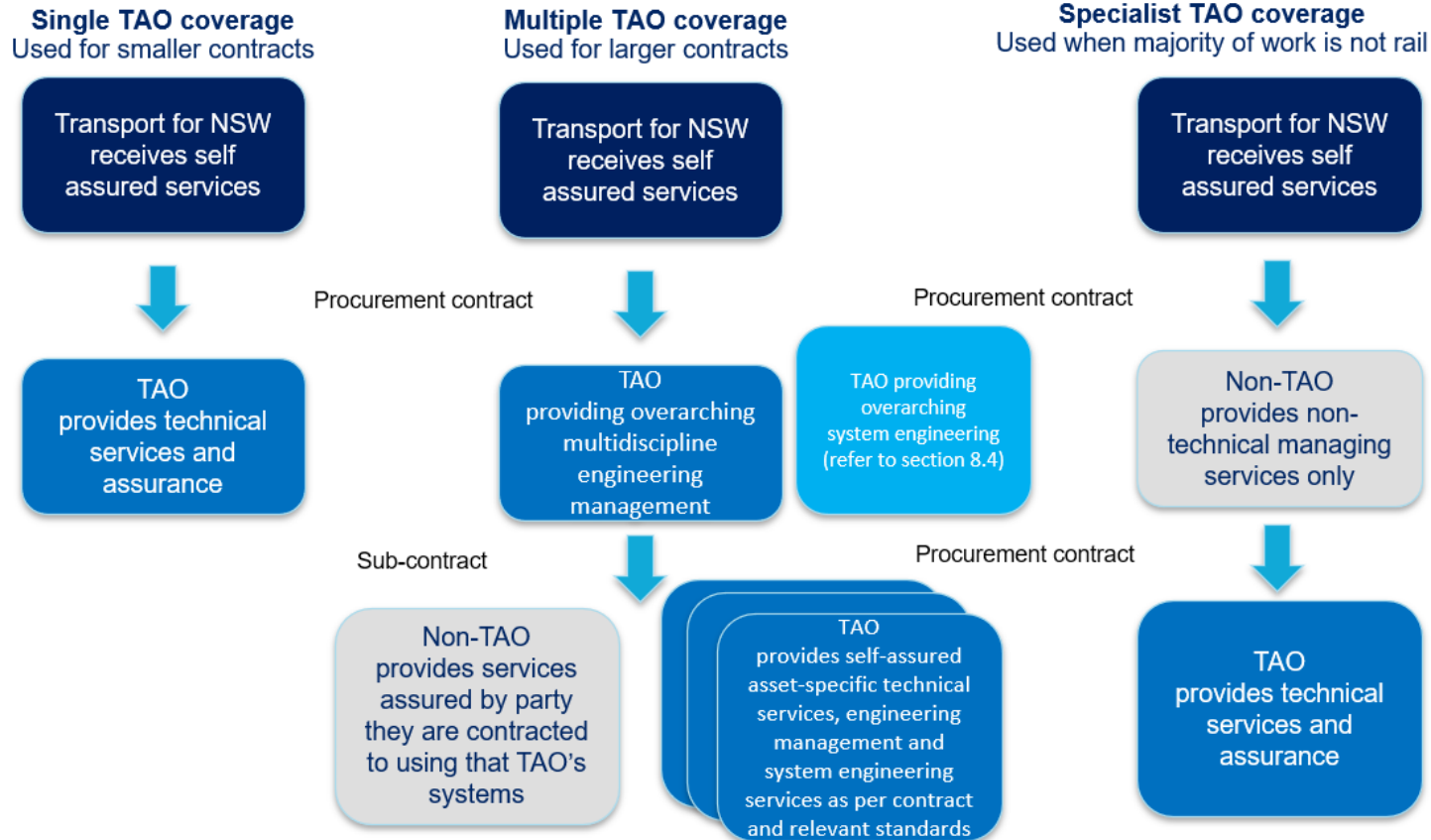
## Technical Authority



## Assurance Effort

# TAO capabilities in multi-party delivery

Specific authorisation requirements and accountabilities have been made clear

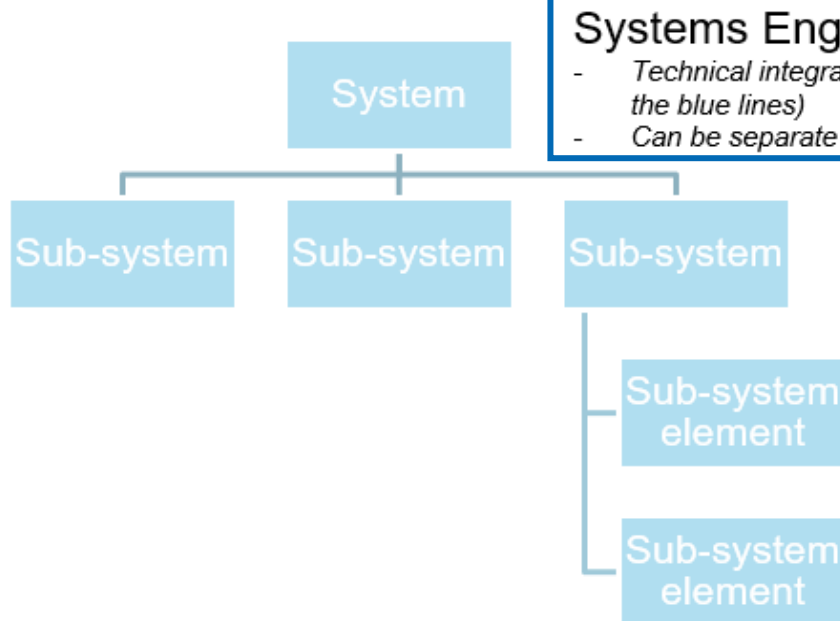


Assured delivery and assurance integration must be:

- Explicitly provisioned in multi-layer or multi-party scenarios
- Covered by relevant TAO authorisation:
  - ✓ Engineering Management (multidiscipline);
  - ✓ Technical and system safety integration and other system engineering;
  - ✓ Technical (specialist) asset specific technical authority;

# Engineering & Integration approach for multi-layered TAO delivery

Engineering management: will coordinate the effective effort of TAOs (organisations and people) to deliver the activities



## Systems Engineering & Assurance

- *Technical integration to realise system outcome (represented by the blue lines)*
- *Can be separate service offering outside asset specific discipline*

### Asset specific discipline

- *design, construct, integrate, test, commission, maintain, dispose*
- *Includes systems engineering & assurance of a sub-system*

### Asset specific discipline

- *design, construct, integrate, test, commission, maintain, dispose*
- *Includes systems engineering & assurance of a sub-system*

### Asset specific discipline

- *design, construct, integrate, test, commission, maintain, dispose*
- *Includes systems engineering & assurance of a sub-system*

TAO with engineering management authorisation

TAO with systems engineering and assurance authorisation

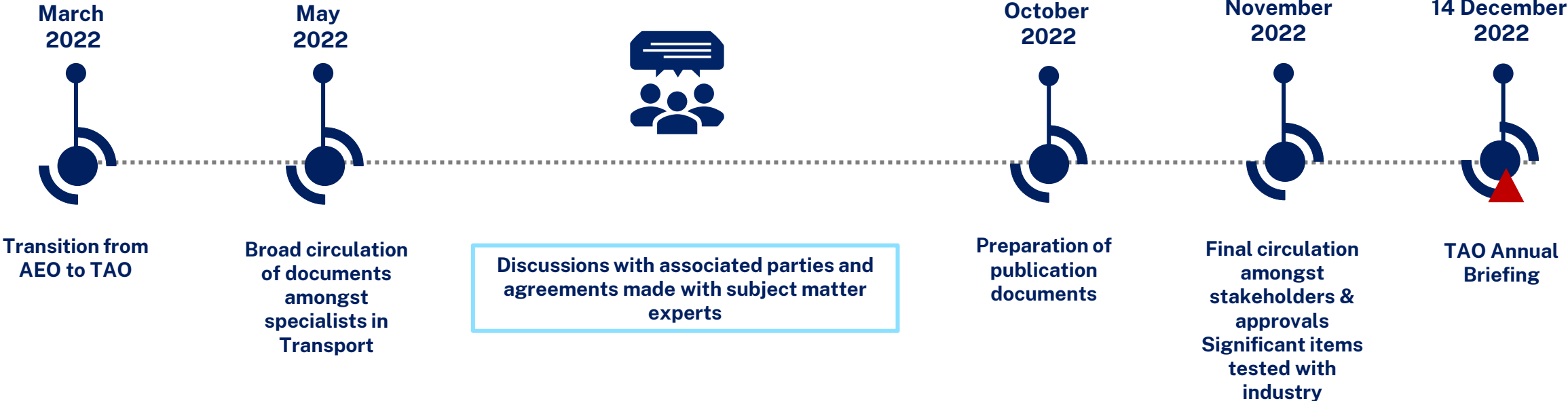
TAO with relevant discipline specific authorisation

Has accountability to integrate sub-systems within the discipline

# The 2022 review took an internal focus

## A consultative process was undertaken across the cluster

After two years of extensive collaboration across Transport and Industry the focus of the 2022 annual review was on addressing known issues and detailed specialist review



# TAO Authorisation Scheme

Minor changes have been made to the scheme document

---



Maturity  
Profiles

Section 5.2



Maritime  
Matrix

Figure 3



Consultants  
involvement in  
assessments

Section 5.1.1

**Referencing to standards, and various definitions brought up to date**  
**TAO authorisation arrangements updated for clarity**  
**TAO authorisation scoping guidance updated for clarity**

# TAO Authorisation Requirements

Requirements and guidance has been updates in key areas

---

**Changes include minor updates to provide enhanced clarity**

Systems Safety  
Assurance  
ENM15 - 19

Configuration  
Management  
EMCA 5

Technical Systems  
Interface  
Management  
ENM4

**Expansion of the sustainability management into the broader  
environmental and sustainability management context**

# TAO Engineering Services

Minor amendments have been made to the engineering services to enhance clarity

---

## Updates to rules of applicability

Align to TAO  
Engineering  
Services Matrix  
Maritime  
Section 7.12.1 & 2

Building  
Certification  
definitions and  
content  
Section 7.6.4

DDA compliance  
definitions  
  
Section 4

**Minor clarifications and improvements in various disciplines and asset lifecycle activities and descriptions**



# TAO Engineering Services Matrix

Minor name changes have been made within the matrix but will be recognised as the same capability

“Certification”  
renamed to  
“Crown  
certification”

“Specialist  
buildings  
expertise”  
renamed to  
“Other  
specialist  
buildings  
expertise”


“Dispose”  
renamed to  
“Dispose/  
Renew”

“Interface  
management”  
renamed to  
“Technical  
System  
Interface  
management”

		TfNSW asset life cycle		Plan	Acquire				Operate and maintain	Dispose						
Correct as at: 022 022		TAO activities supporting TfNSW asset life cycle														
<Insert TAO or contract name or title > engineering services matrix		BSR development	Concept or reference design	Design	Material procurement	Manufacturing or fabrication	Construction or installation	Subsystem integration	Testing and commissioning	Acceptance services	Plan asset maintenance	Maintain or replace assets	Conduct asset condition surveys	Plan decommissioning or disposal	Conduct decommissioning or disposal	
Specialist engineering disciplines	Fleet Engineering	Locomotive														
	Freight vehicle															
	Heavy commuter electric multiple unit or diesel multiple															
	Railbound infrastructure maintenance vehicle															
	Railroad vehicle															
	Trolley and trailer															
	Light rail vehicle															
	Other rail vehicle (shall be specified in notes)															
	Railgate closure system (shall be specified in notes)															
	Signal and Control Systems Engineering	Supervisory and control system														
		Interlocking system														
		Trackside system (including cabling)														
		Telecommunications Engineering	Telecommunications system and cabling													
	Telecommunications Engineering	Telecommunications system														
		Supervisory control and monitoring system														
		Telecom wireline fixed network														
		Telecom wireline or mobile network														
	Carrier Infrastructure and Engineering	Telecommunications Facility														
		Wheel and rail interface														
	Civil Engineering Infrastructure	Geometry and alignment														
		Component and structure														
		Road and pavement														
		Drainage and hydrology														
	Interchange and Building	Railway surveying														
		Engineering surveying														
		Geotechnical														
		Combined service route														
	Energy Network and System	Tunnelling														
Bridge and structure																
Earthwork																
Building architecture																
Non-asset specific engineering services	Building structure (shall specify area of specialisation if appropriate in notes)															
	Building services (shall be specified in the notes)															
	Certification															
	Specialist building expertise (shall be specified in the notes)															
	High voltage aerial feeder															
	High voltage cable															
	Transmission system and cabling hub															
	Distribution substation															
	High voltage protection system															
	Low voltage power system and low voltage protection															
Service	Earthing, bonding, electrolysis and lightning protection															
	Electrical control system (SCADA) (shall be specified in the notes)															
	Overhead wiring															
	Electrical network planning and modelling															
Non-asset specific engineering services Provided as specialist service directly to TfNSW, or in relation to other service providers in the interest of or on behalf of TfNSW (select from definitions in TS 06197.2 if required)																
Service Asset management system services (shall be specified in the notes)		Service System engineering and support (including systems and safety integration) services (shall be specified in the notes)														
Engineering management services (shall be specified in the notes)		Other professional engineering services (shall be specified in the notes)														


# Updates to the documentation

Four out of five documents are being published on Monday 19 December




## Existing Standard

<b>Supersede:</b> TS 06197.1:1.1 TAO Authorisation Requirements
<b>Publish:</b> TS 06197.1:2.0 TAO Authorisation Requirements



## Existing Specifications

<b>Supersede:</b> TS 06197.2:1.1 TAO Authorisation Scheme	<b>Supersede:</b> TS 06197.3:1.1 TAO Engineering Services
<b>Publish:</b> TS 06197.2:2.0 TAO Authorisation Scheme	<b>Publish:</b> TS 06197.3:2.0 TAO Engineering Services



## Existing Form

<b>Supersede:</b> TS 06197.4:1.0 TAO Engineering Services Matrix
<b>Publish:</b> TS 06197.4:2.0 TAO Engineering Services Matrix

# TAO documentation will be available on 19 December



Technical  
Supplier  
Assurance  
Framework  
(TS 00018)



TAO  
Authorisation  
Requirements  
(TS 06197.1)



TAO  
Authorisation  
Scheme  
(TS 06197.2)



TAO  
Engineering  
Services  
(TS 06197.3)



TAO  
Engineering  
Services  
Matrix  
(TS 06197.4)



TAO  
Engineering  
Services  
Matrix -  
Maritime  
(TS 06197.5)

[Asset Management Branch | Transport for NSW](https://www.transport.nsw.gov.au/industry/asset-management-branch/technical-supplier-assurance-tsa-framework)

[TSA Training](#)

<https://www.transport.nsw.gov.au/industry/asset-management-branch/technical-supplier-assurance-tsa-framework>

Training is available for  
Transport and Industry

# Strategic Priorities

Our focus for 2023



# Industry priorities for 2023

As part of our continuous improvement in 2023 we would like to focus on 3-5 strategic priorities.

We would like your feedback on what those should be.





# What would be the key strategic priorities to focus on for 2023



# Transport priorities for 2023

We have identified four strategic areas for improvement in 2023

Recognition &  
Performance

Maturity  
ratings

Authorisation  
process

TAO  
Matrix

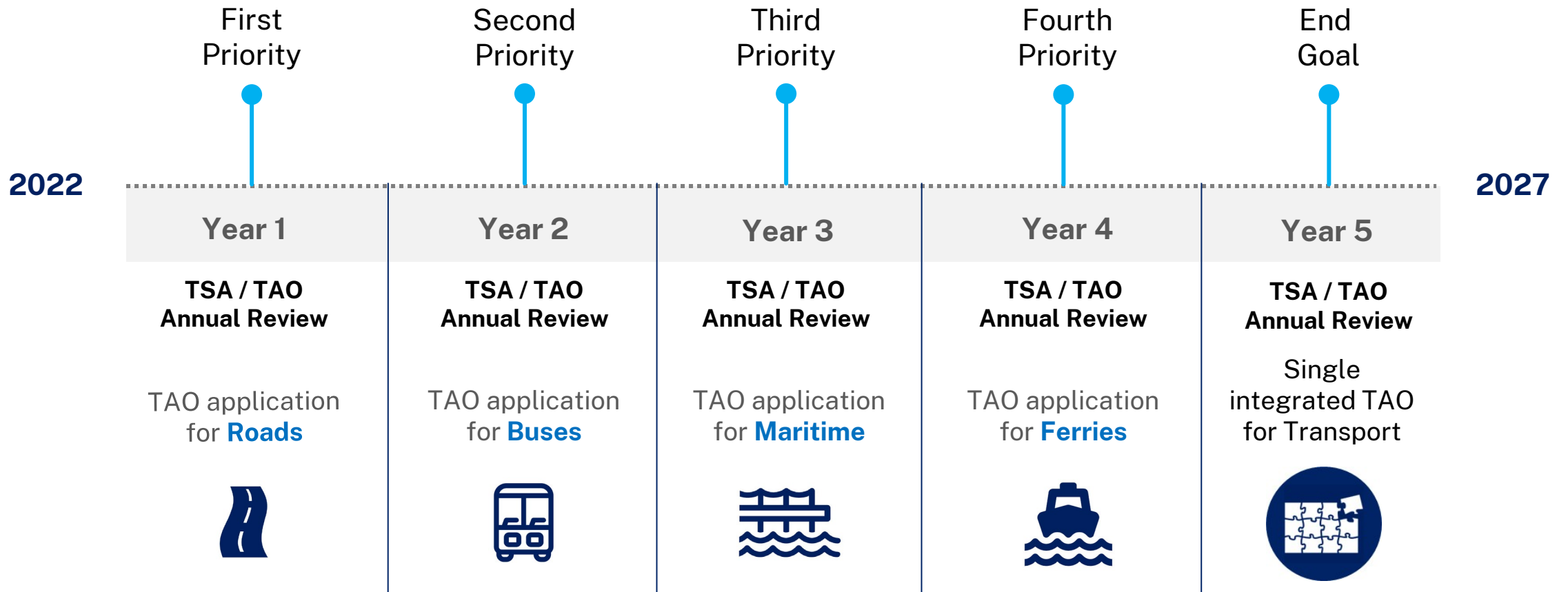
These strategic priorities will be merged with the industry feedback to form our forward work program





# Targeting a single multi-modal scheme

Annual release to include addition of new mode each year dependant on industry feedback. Transition associated with each mode would extend across multiple years.



# Q&A

Thank you for  
attending

