



# Evaluation of the European C-ITS Platform including Threat, Vulnerability and Risk Analysis

6 December 2018



*Austroads*

# Today's moderator

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## **Eliz Esteban**

Communications Officer  
Austroads

P: +61 2 8265 3302

E: [eesteban@austrroads.com.au](mailto:eesteban@austrroads.com.au)



# About Austroads

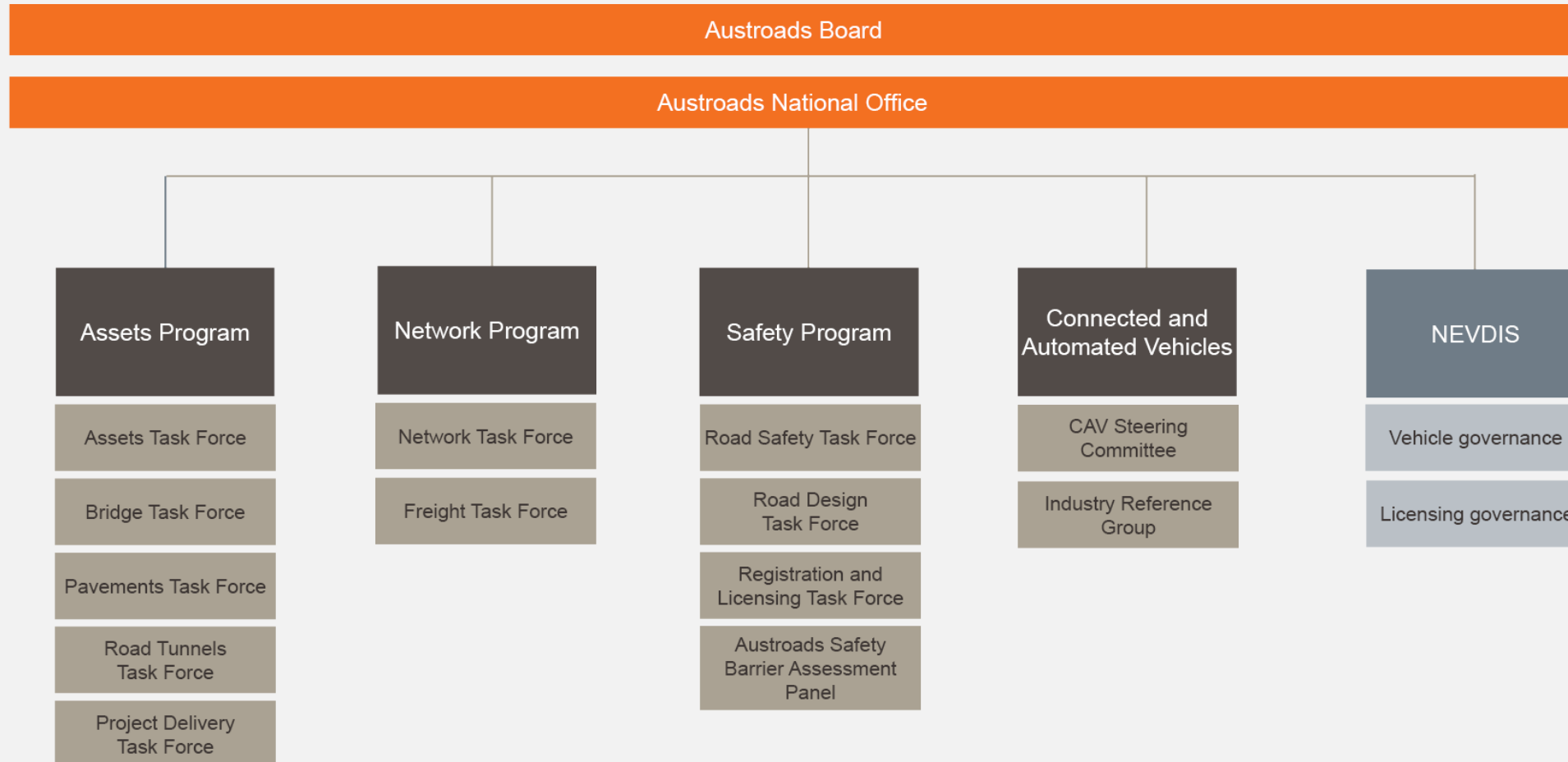
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## The peak organisation of Australasian road transport and traffic agencies

- Roads and Maritime Services New South Wales
- Roads Corporation Victoria
- Department of Transport and Main Roads Queensland
- Main Roads Western Australia
- Department of Planning, Transport and Infrastructure South Australia
- Department of State Growth Tasmania
- Department of Infrastructure, Planning and Logistics Northern Territory
- Transport Canberra and City Services Directorate, Australian Capital Territory
- Department of Infrastructure, Regional Development and Cities
- Australian Local Government Association
- New Zealand Transport Agency

# Our structure



# Housekeeping



Presentation = 35 mins

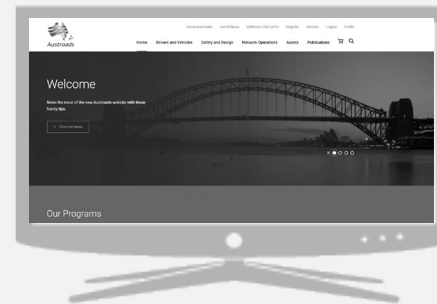
Question time = 15 mins



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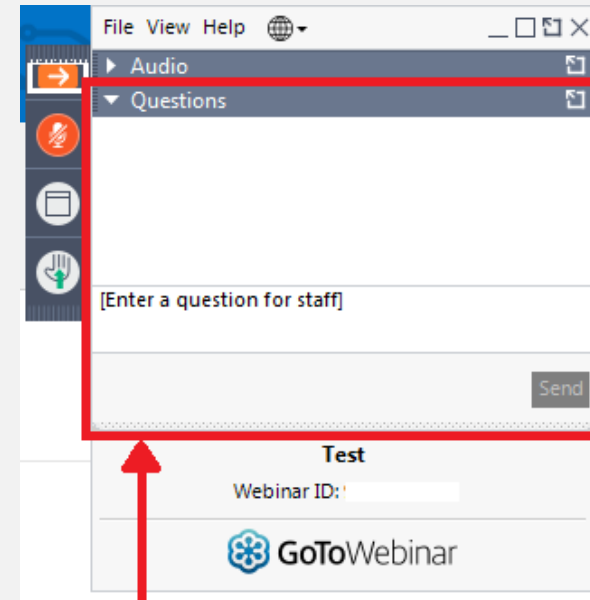
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# Send us your questions



**Step 1: Open side panel**



**Step 2: Type questions here**

Let us know the slide number your question relates to

# Austroads report



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# Today's presenters

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**Niko Limans**

Project Manager C-ITS  
Austroads

E: [niko.z.limans@tmr.qld.gov.au](mailto:niko.z.limans@tmr.qld.gov.au)



**David Green**

Senior Professional Leader  
ARRB

E: [david.green@ARRB.COM.AU](mailto:david.green@ARRB.COM.AU)



**Dr Bob Williams (Q&A)**

Key sub-contractor  
CSI UK

# Agenda



Topic	Presenter
Project Background and Introduction <ul style="list-style-type: none"><li>• Austroads CAV Program</li><li>• Background and aims of project</li><li>• Introduction to team</li><li>• Project overview</li></ul>	Niko Limans David Green
Key Findings <ul style="list-style-type: none"><li>• Literature review</li><li>• Stakeholder consultation</li><li>• Assessment</li></ul>	David Green
Conclusion	David Green
Q&A	All presenters



# Project Background and Introduction

Niko Limans and David Green



# Austrroads Connected and Automated Vehicles (CAV) Program



- C-ITS Projects
- Austrroads direction of C-ITS in the upcoming years
- International alignment



# Introduction to Team



## Project Team



Austroads Project  
Manager  
Niko Limans



ARRB Project Leader  
David Green



Sub-contractor  
Dr Bob Williams (CSI UK)



Sub-contractor  
CICA Group

## Review Team



Austroads  
Project Manager



Austroads Project  
Reference Group



Austroads CAV  
Steering Committee



Austroads Board

# Introduction to Team - Project Review

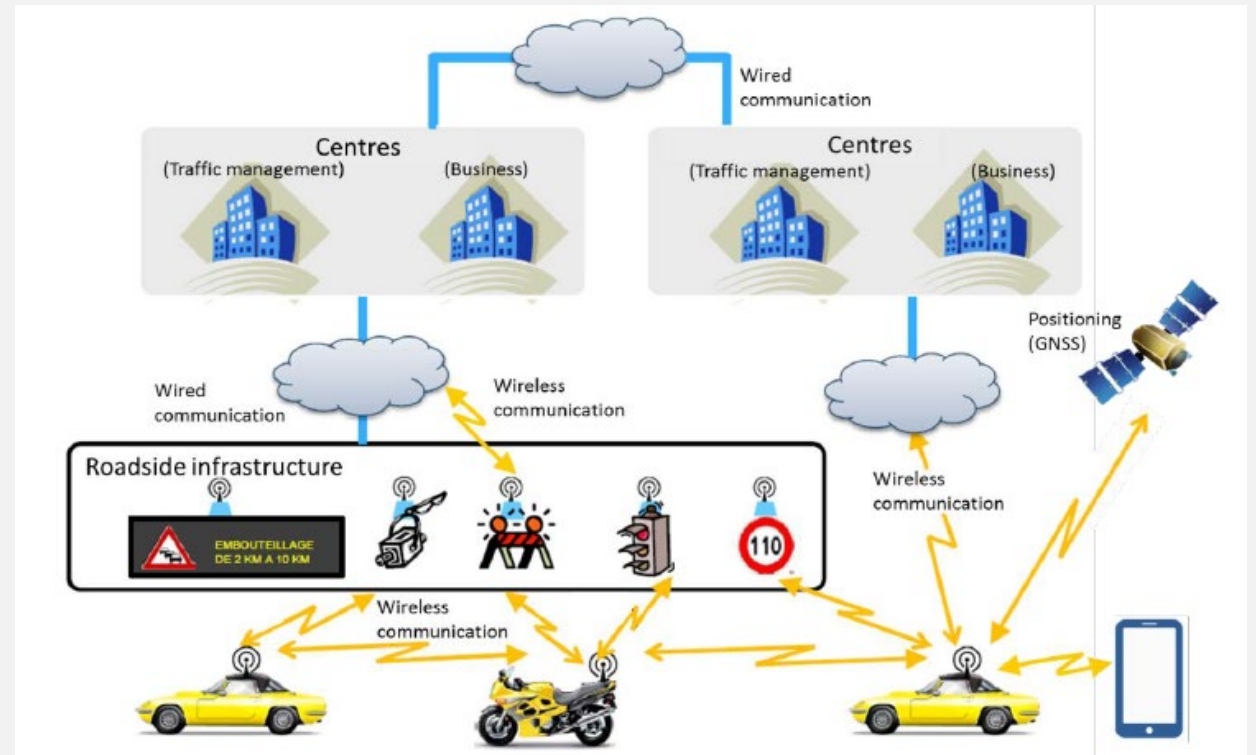


Austrroads Project Reference Group



# Background

- Austroads is working towards adopting the European C-ITS Platform
- The European Telecommunications Standards Institute (ETSI) has published a Threat, Vulnerability and Risk Analysis (TVRA) standard
  - ETSI TR 102 893 V1.2.1 (2017-03)
- Austroads is interested in the broader hybrid C-ITS paradigm
  - ITS-G5/M5
  - LTE/4G/5G



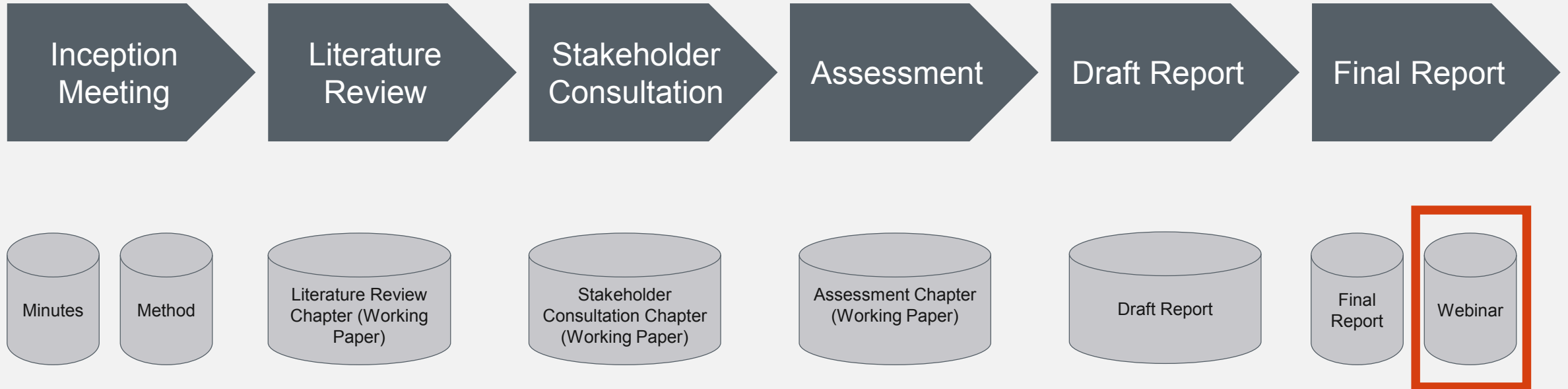
# Aims of project

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- Evaluate the ETSI C-ITS TVRA and put into the Austroads endorsed context
- Identify areas of Austroads interest
  - Central ITS Stations (ITS-S)
  - Personal ITS Stations
  - Cellular communications
  - Areas where further examinations are required
- Identify areas of Austroads interest where further detailed examinations are required.

This webinar provides a high level overview of the findings of the project.

# Project Overview



The final project report should be seen as a progression on the ETSI TR 102 893 and does not replace it. Australia and New Zealand (ANZ) should keep abreast of the developments of an updated ETSI TVRA and look to follow that TVRA.

# Key Findings

David Green



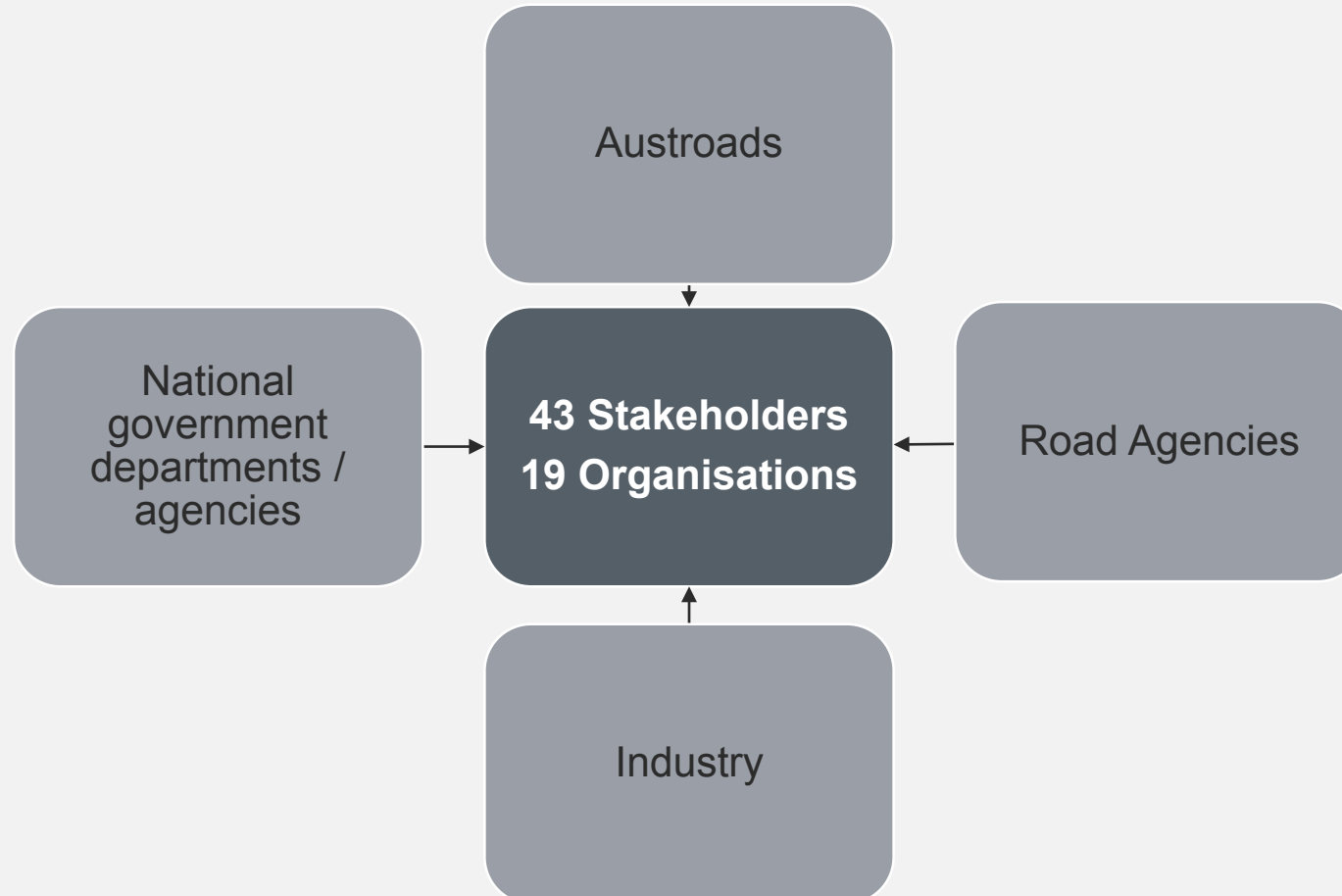
# Literature Review

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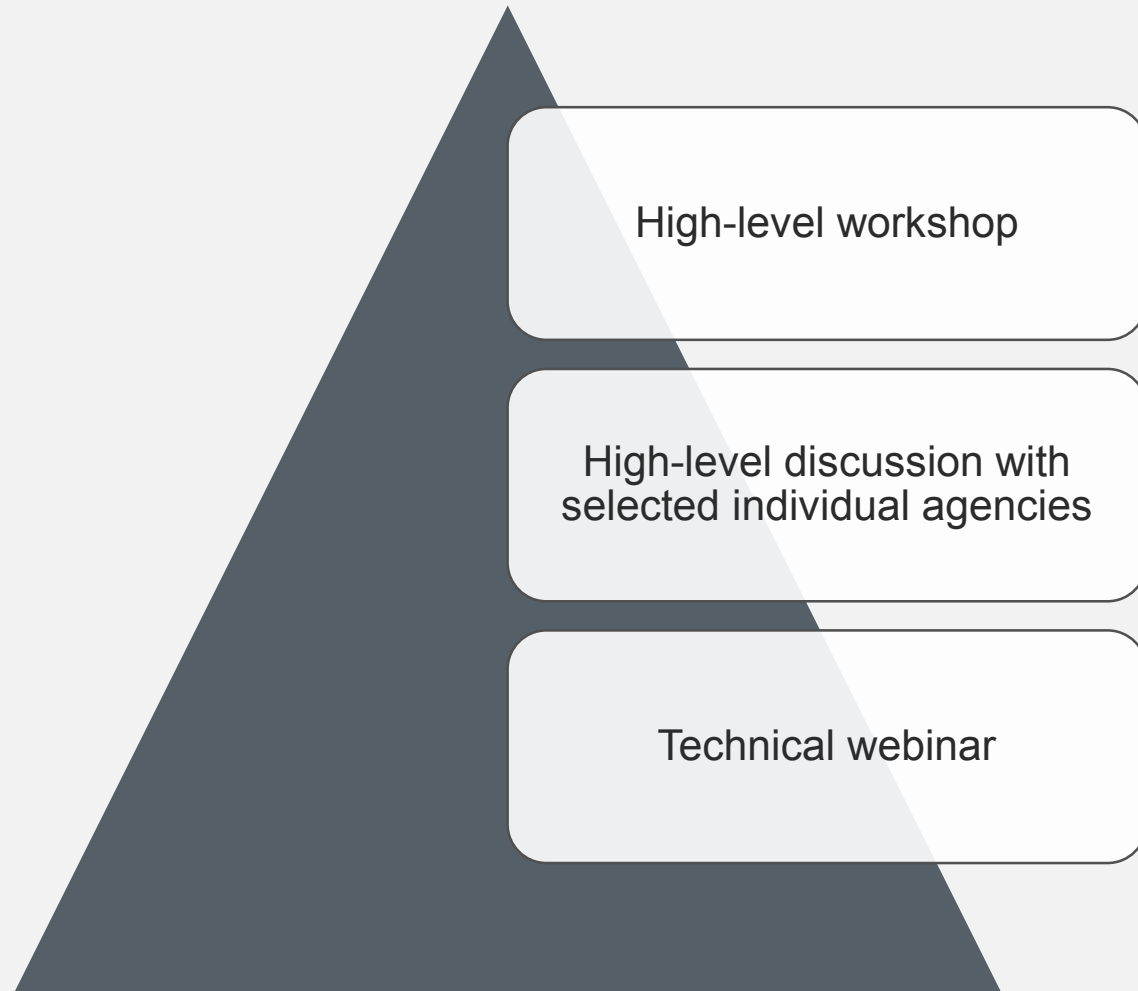
- ANZ can accept European Recommendations and continue to instantiate a Europe like solution
- There is support for a hybrid paradigm based on International Standards
- For today, the hybrid of G5/M5+4G/LTE, are the only feasible communications for C-ITS
- 5G/C-V2X are potential technologies
- Security should be a fundamental part of the architecture, and not an add-on
- It is recommended that Austroads follow HTG6 proposals
- For the Central ITS-S the role of core systems support needs to be considered
- ExVe should not be the basis for critical ANZ ITS services
- Japanese VICS equipment is not interoperable with C-ITS.

# Stakeholder Consultation



# Stakeholder Consultation

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# Stakeholder Consultation



**78 comments**  
**18 themes**  
**3 theme areas**

Technical

Policy

Operational

# Stakeholder Consultation

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## Technical TVR Themes

1. Consideration of the broader outcomes and agnostic of technology
2. Addressing certification
3. Addressing security
4. Ensuring the required privacy functionality is incorporated into C-ITS

# Stakeholder Consultation



## Policy TVR Themes

- |   |  |
|---|--|
| 1. Harmonisation in deployment                  | 6. Need for a C-ITS champion                     |
| 2. Fitting in line with broader strategies      | 7. Undertaking strong diligence                  |
| 3. Taking a proactive approach                  | 8. Understanding and identifying disruptive tech |
| 4. Close collaboration with EU model            | 9. Understanding the governance model            |
| 5. Understanding the standards for the EU model | 10. Achieving sufficient interoperability        |
|   | 11. Managing open data                           |

# Stakeholder Consultation

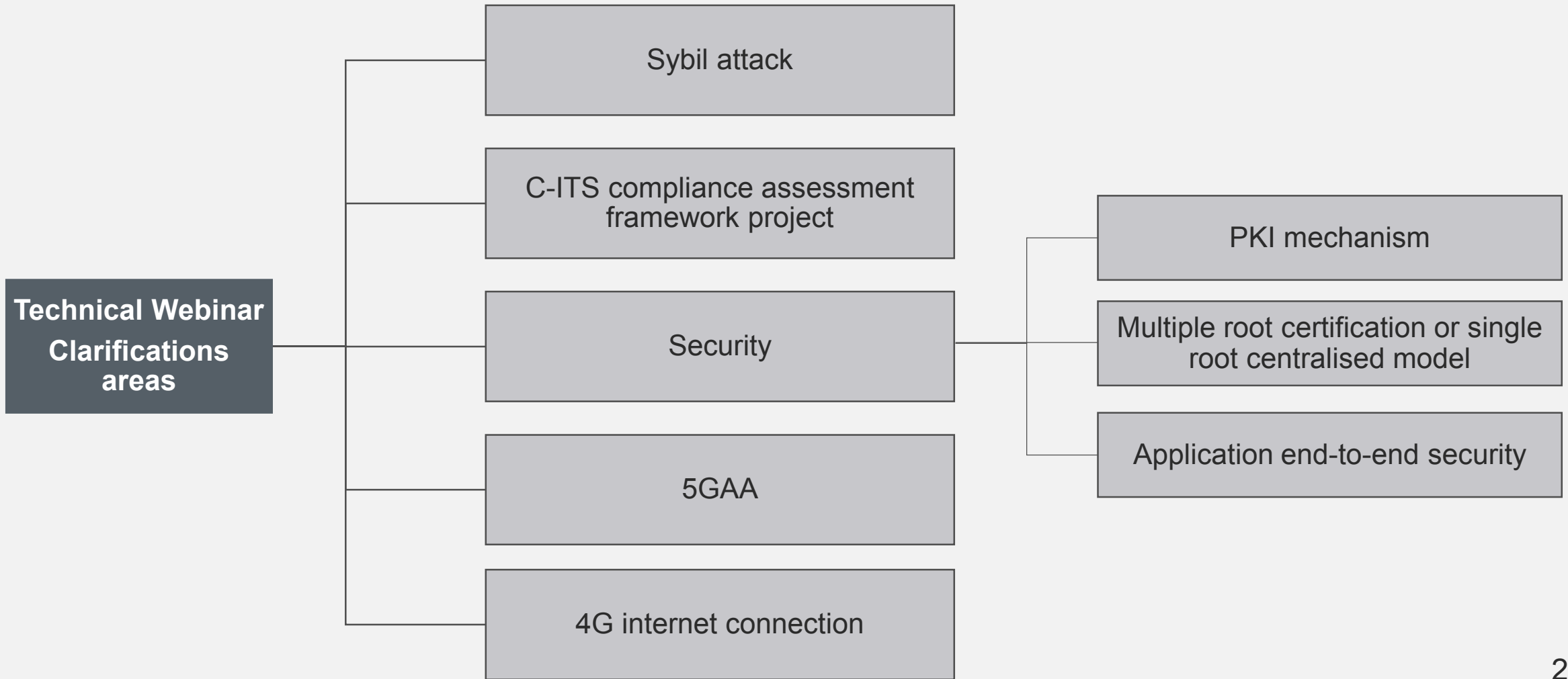
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## Operational TVR Themes

1. Addressing legacy systems and how they integrate with C-ITS
2. Considering lifecycle management
3. Having accurate positioning

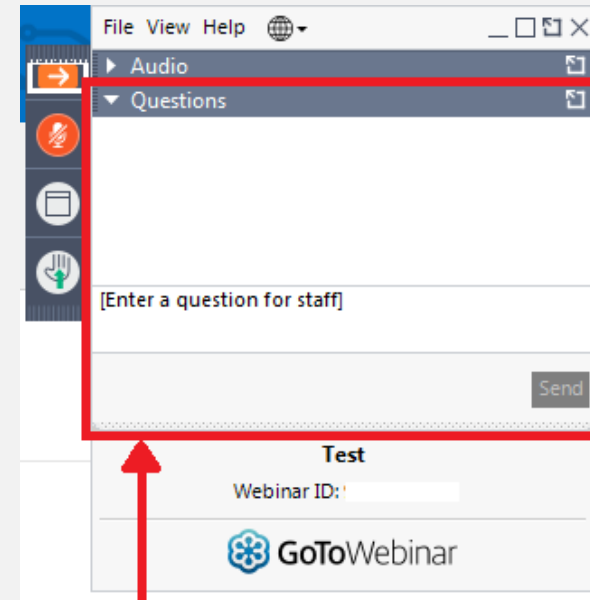
# Stakeholder Consultation



# Send us your questions



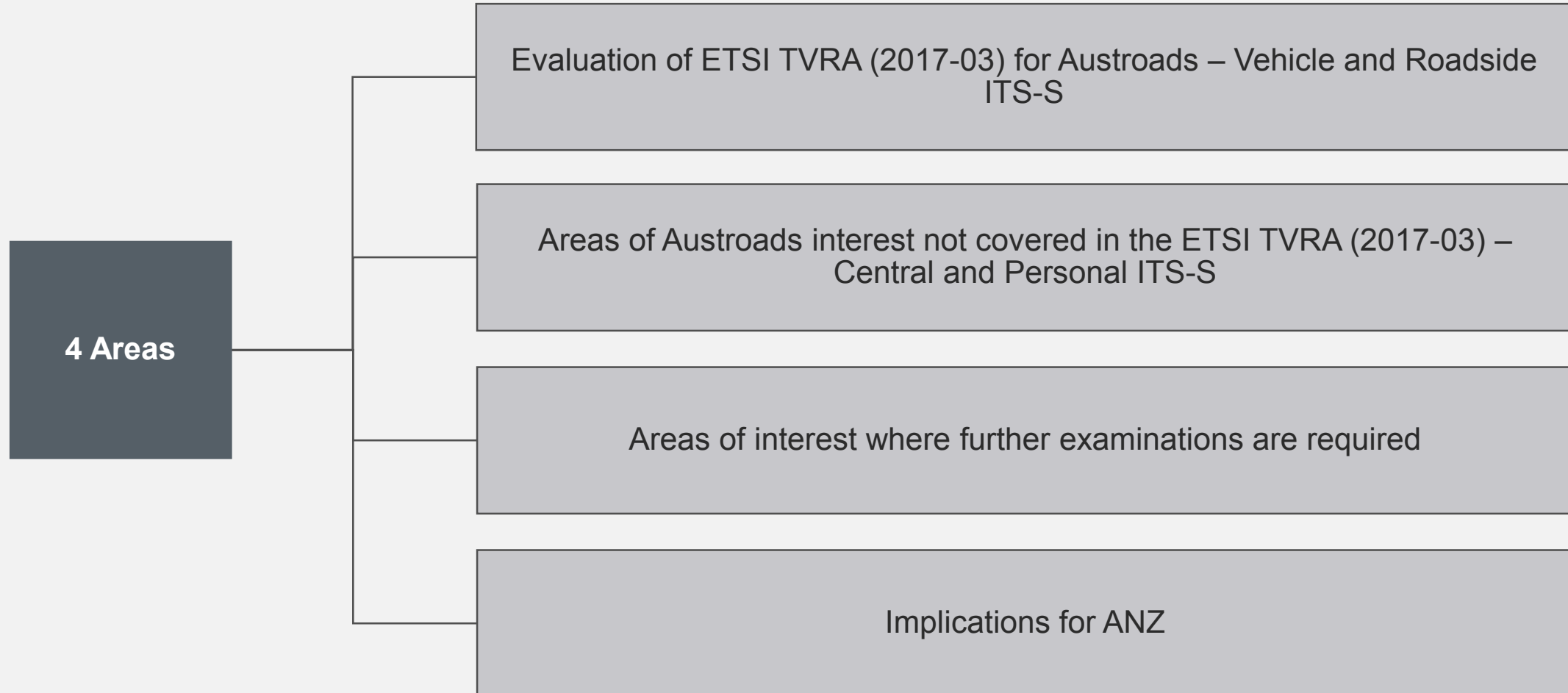
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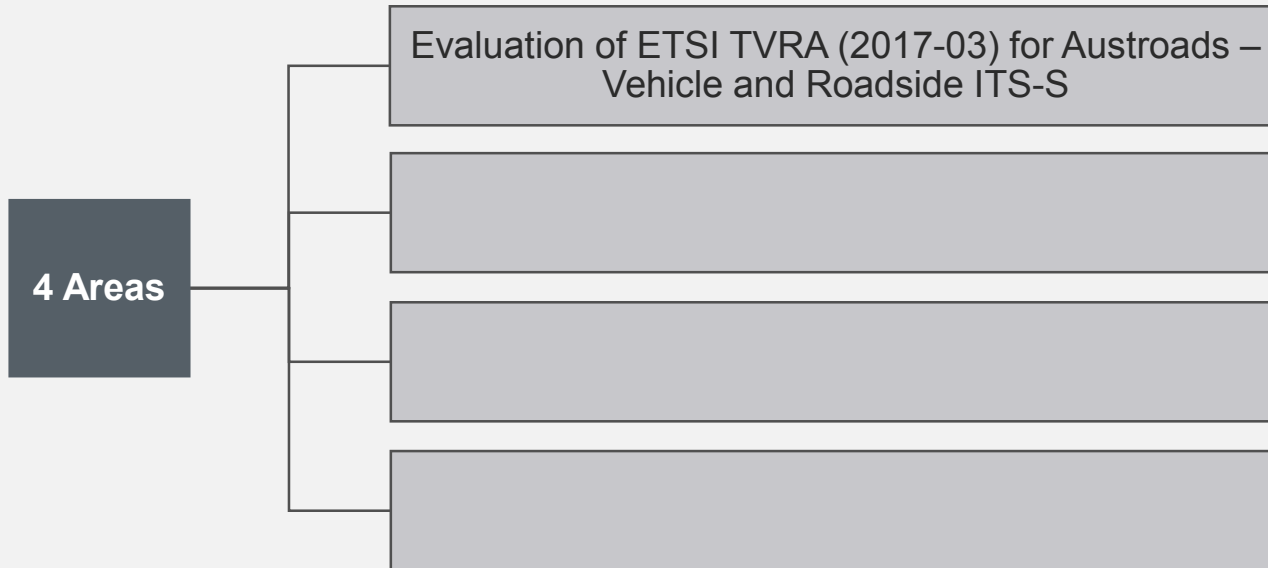
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# Assessment



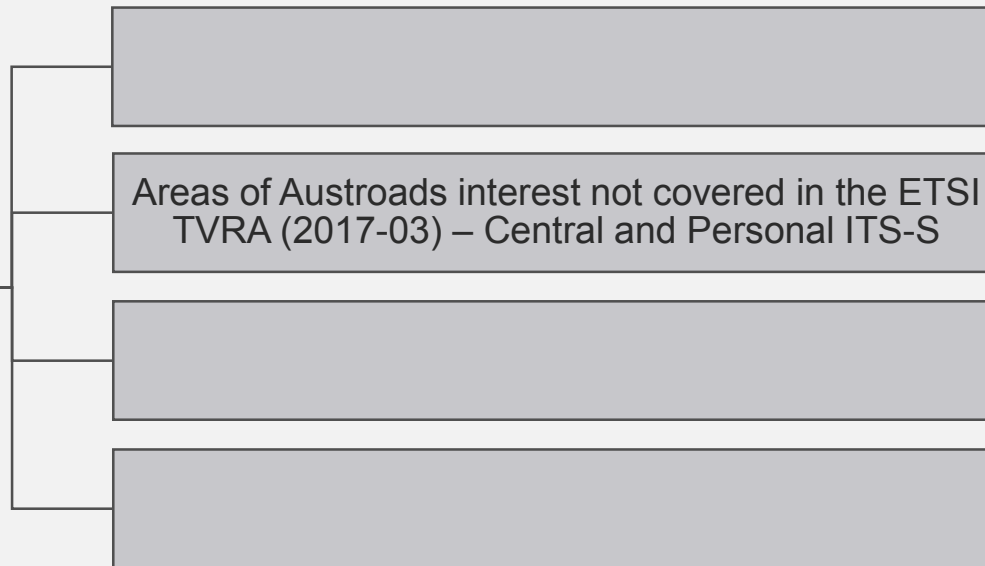
# Assessment



- ETSI ITS TVRA is comprehensive
- Scope was limited to G5/M5
- The world is moving towards to ‘hybrid’
- ETSI have commissioned a new project to update the existing TVRA.

# Assessment

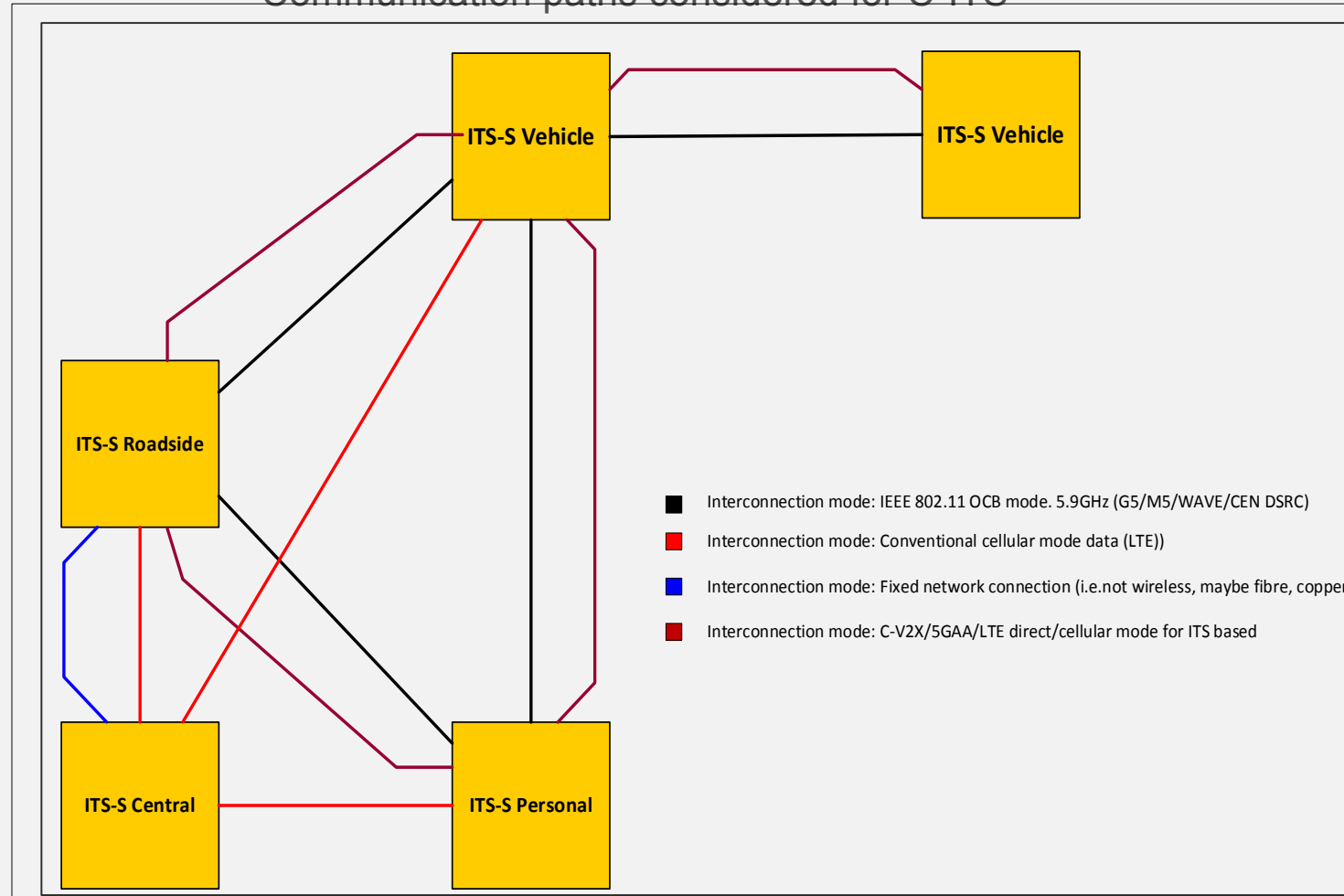
4 Areas



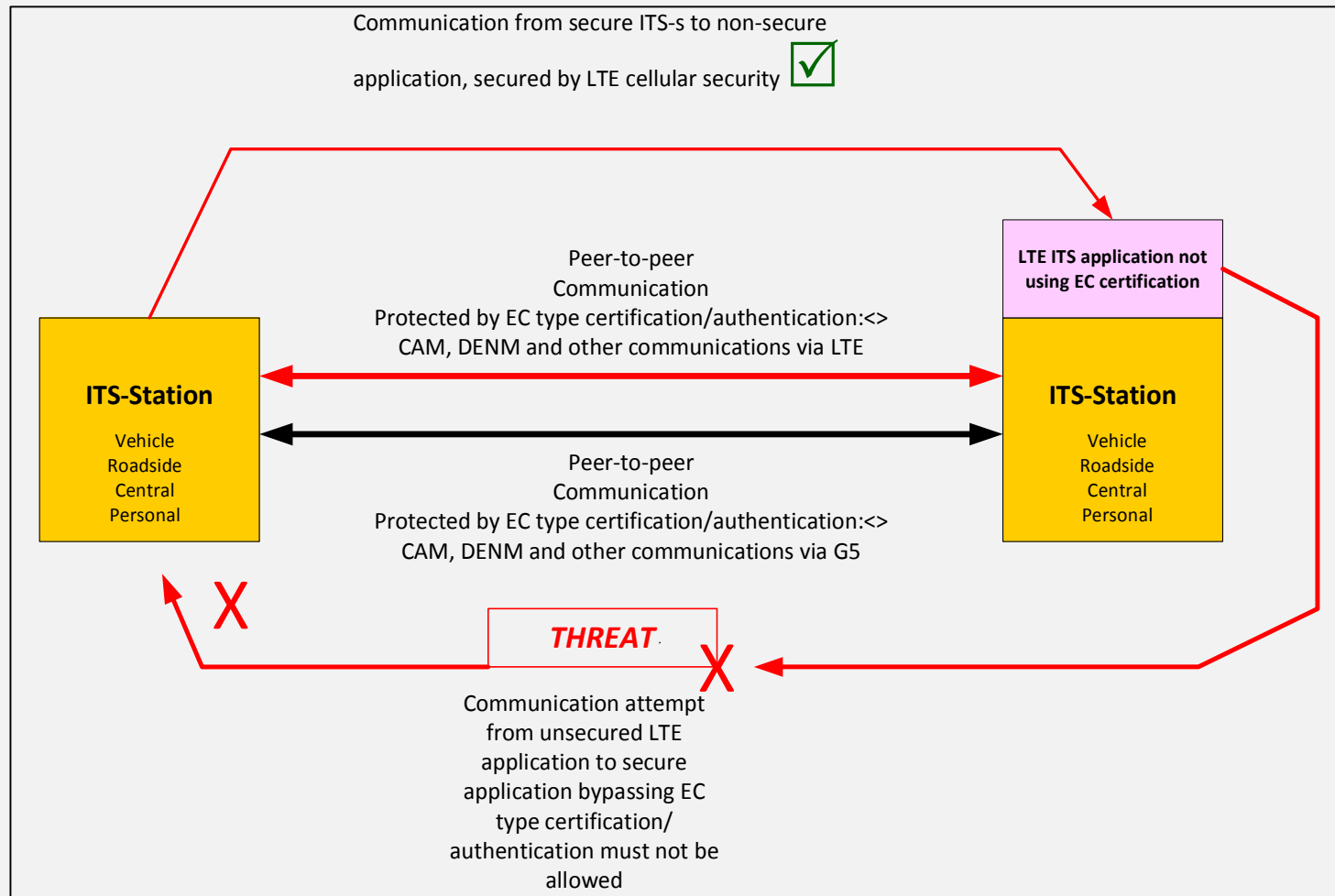
- Threats and associated weaknesses that define the vulnerabilities were developed
- For a generic model addressing Vehicle, RSU, Personal and a Central ITS-S
- Threats are generic and similar to that presented in the ETSI TVRA.

# Assessment

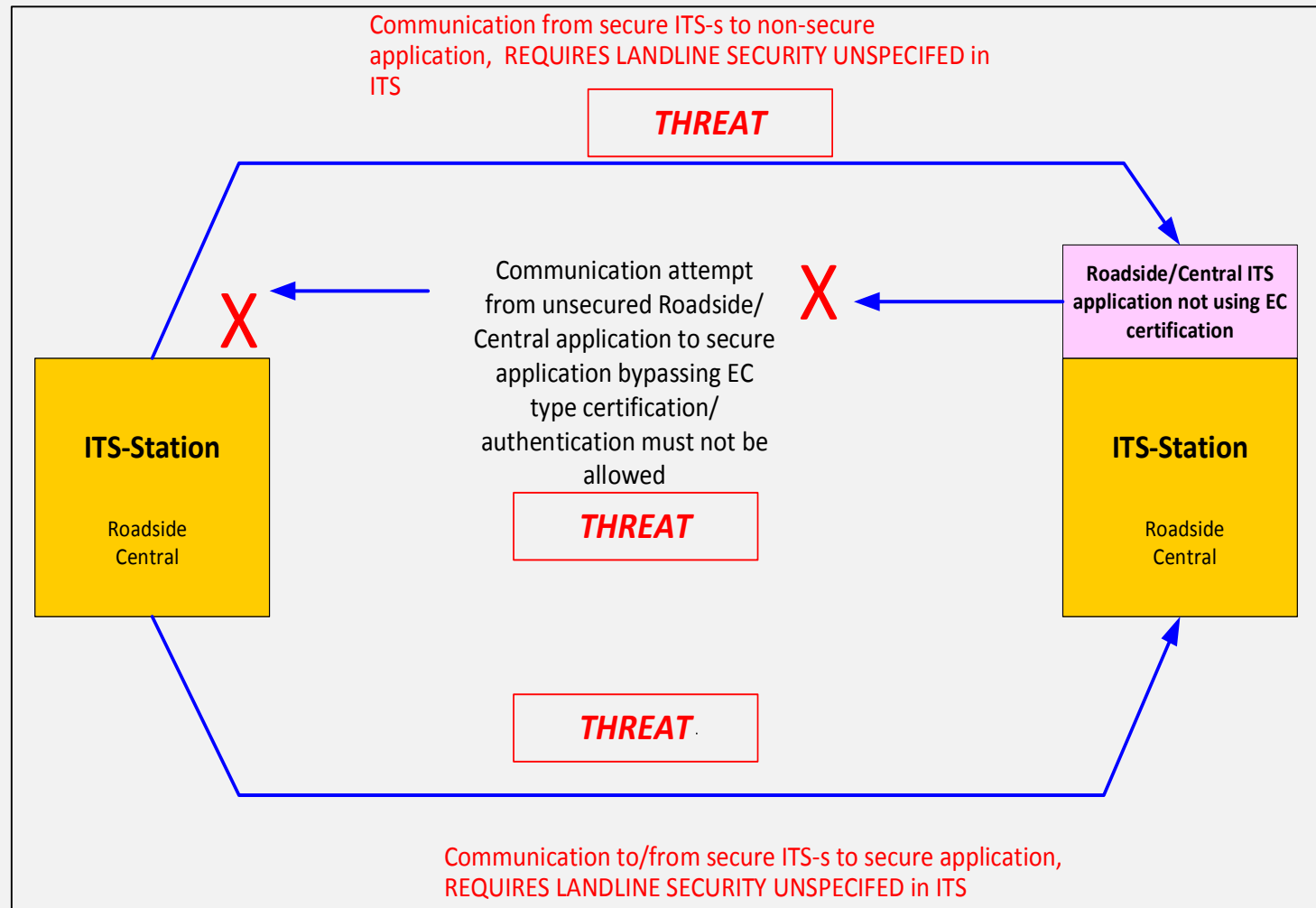
Communication paths considered for C-ITS



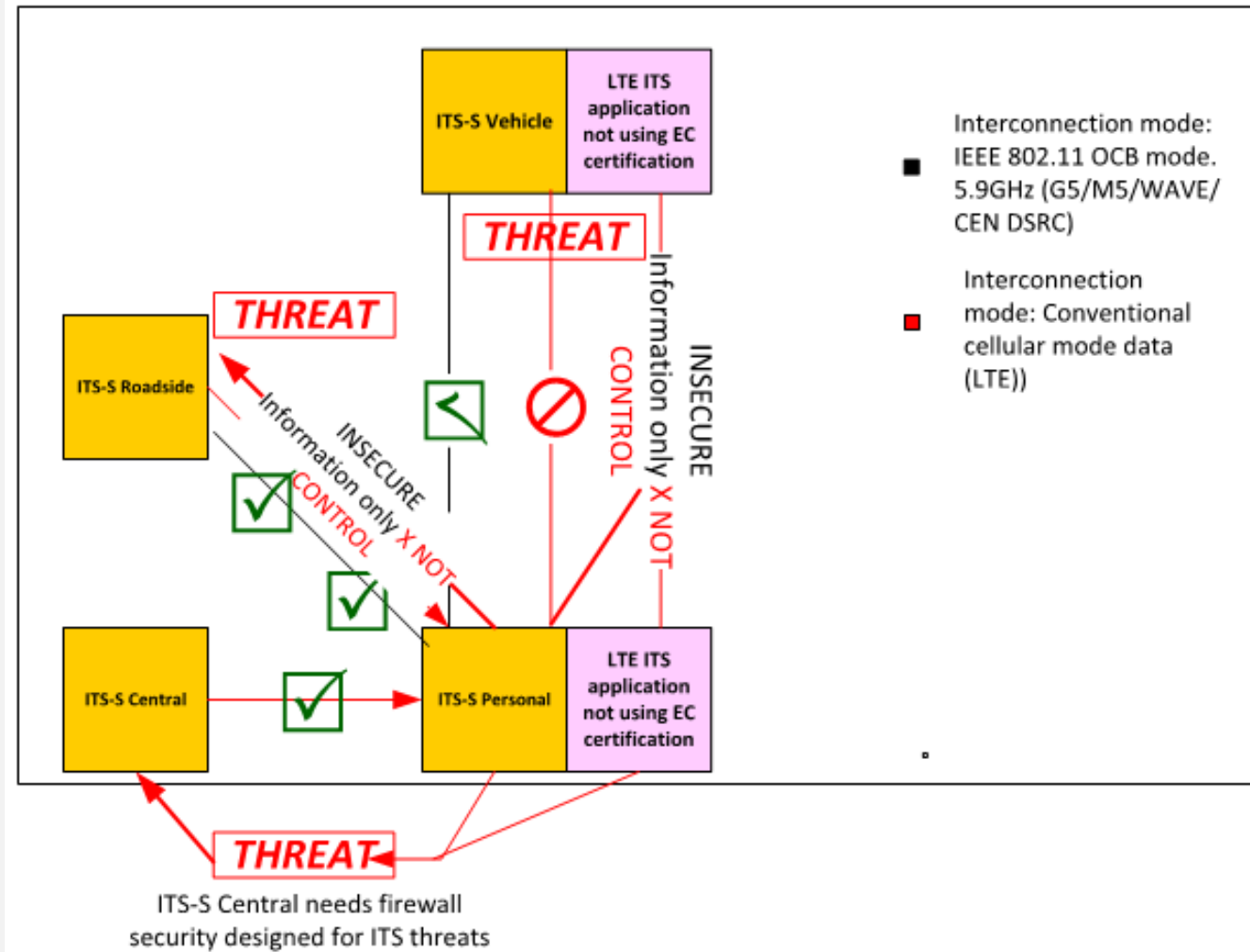
# Assessment



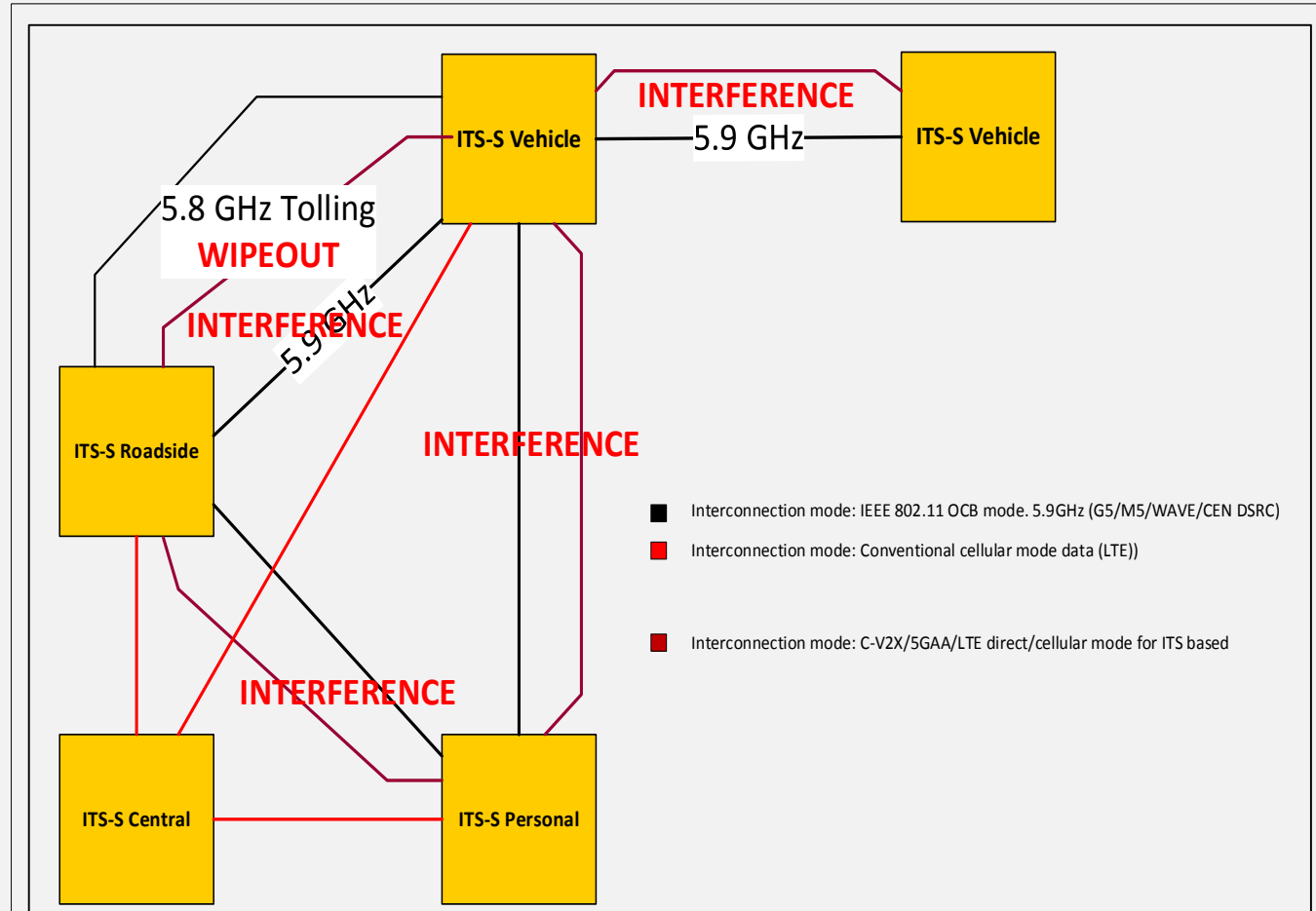
# Assessment



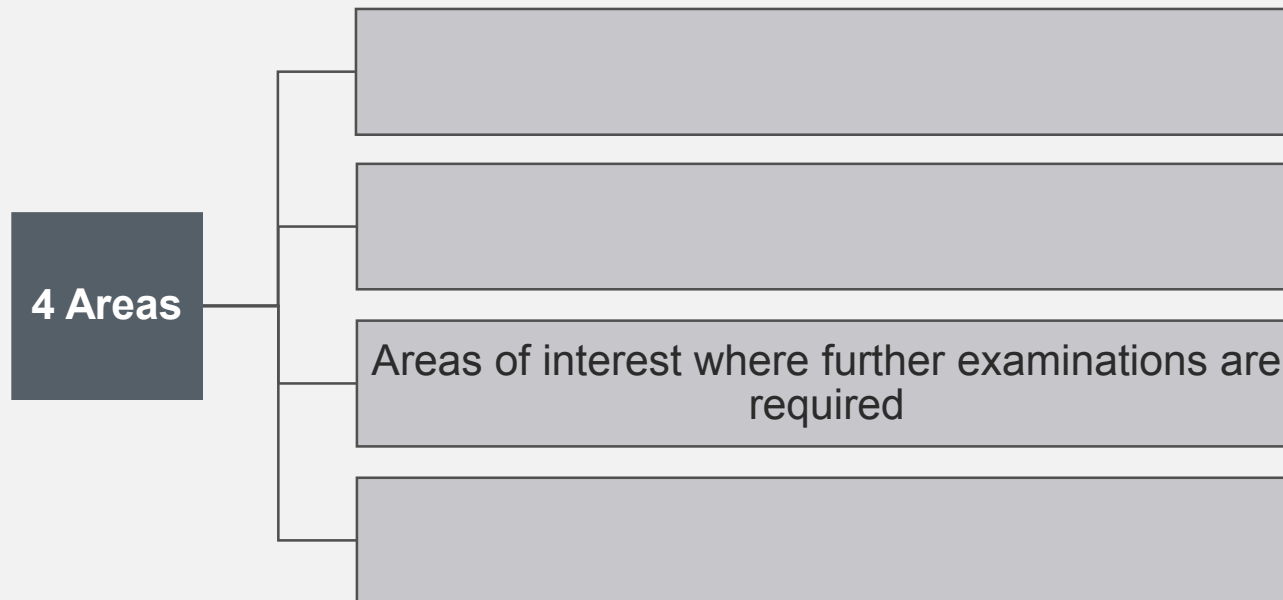
# Assessment



# Assessment



# Assessment



- Internet of things
- Core systems support
- Japanese VICS and ITS 'connect'
- C-V2X, LTE-V2X, 5GAA & 5G
- ExVE
- Policy and Operational Threats.

# Assessment



4 Areas



Two policy choices around:

1. Conformity assessment and certificates
2. Privacy.

# Assessment

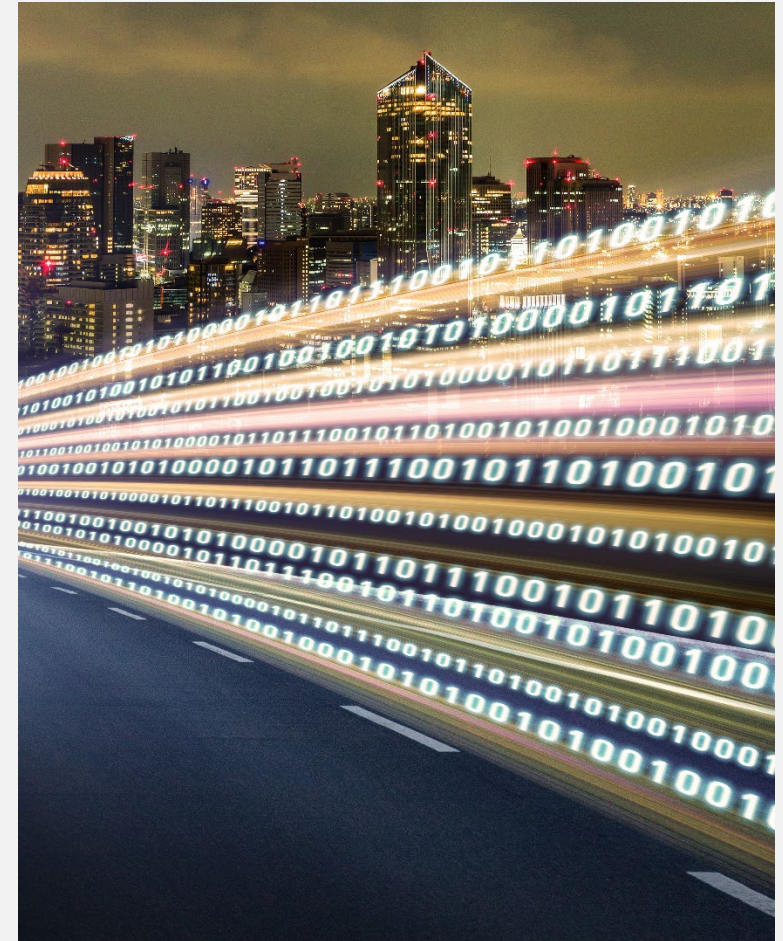
## EU General Data Protection Regulation (GDPR)

- The base EU SCMS will comply to GDPR
- Any application or service operating in the EU must comply to GDPR
- It is not the applications that meet GDPR, but the use of an application
- An ANZ application that does not comply to GDPR may be used in ANZ but not in Europe
- In any sharing arrangement, these details would need to be sorted out.

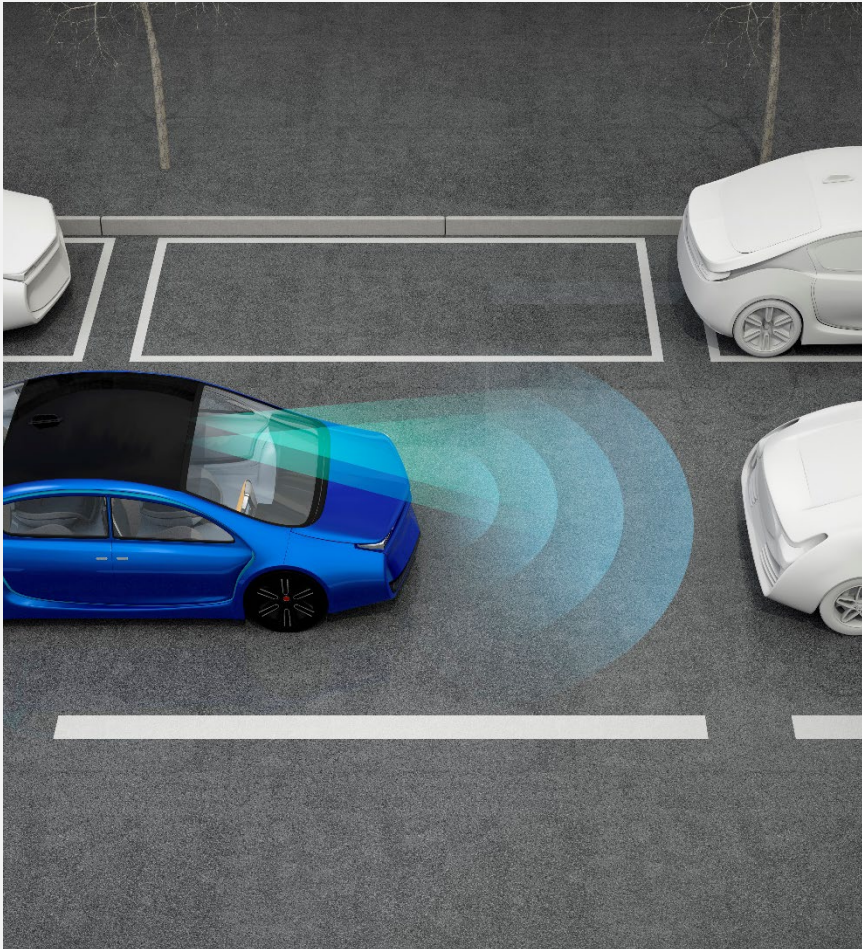


# Assessment

- Too premature to ascertain what the threats are to a personal ITS-S or a central ITS-S
- ANZ to keep abreast of the developments of an updated ETSI TVRA and look to follow that TVRA
  - This should address the Technical TVR Themes
- ANZ should focus on the issues ranging across policy and operational.



# Assessment



- An ANZ strategy document/s is needed to outline
  - how to deal with the policy and operational issues
  - how to deal with the EU platform and the technical issues
- The ANZ strategy developed cognisant of other strategies
  - electric vehicles
  - autonomous vehicles
  - transforming mobility strategies.

# Conclusion

David Green



# Conclusion

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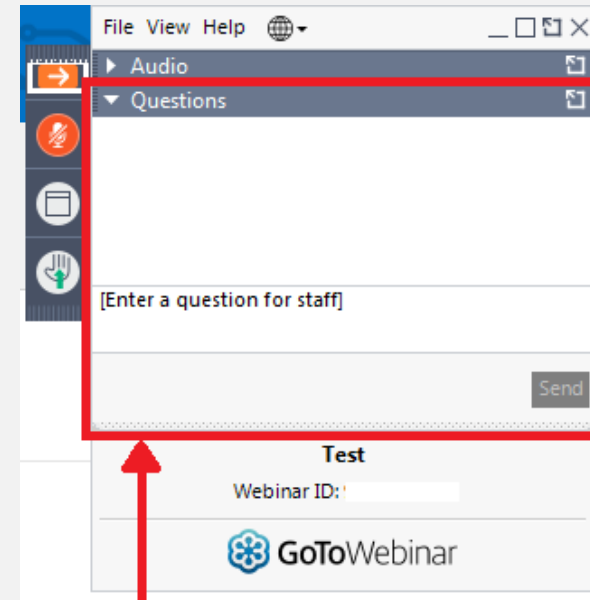


- The current ETSI TVRA is sound based on the scope in which it was written
- The ETSI TVRA is being updated to capture personal and central ITS-S
- Stakeholder consultation identified threats ranging across technical, policy and operational
- Austroads should seek to follow the updated ETSI TVRA for guidance on technical threats
- Austroads should focus on addressing the policy and operational threats
- An ANZ strategy document should be prepared outlining how Austroads
  - should deal with the policy and operational issues
  - provide input into technical development of the EU platform
- ANZ strategy should be written cognisant of other strategies relating to transforming transport.

# Send us your questions



**Step 1: Open side panel**



**Step 2: Type questions here**

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# Questions?

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**Niko Limans**

Project Manager C-ITS  
Austroads

E: [niko.z.limans@tmr.qld.gov.au](mailto:niko.z.limans@tmr.qld.gov.au)



**David Green**

Senior Professional Leader  
ARRB

E: [david.green@ARRB.COM.AU](mailto:david.green@ARRB.COM.AU)



**Dr Bob Williams**

Key sub-contractor  
CSI UK

# Upcoming Austroads webinars

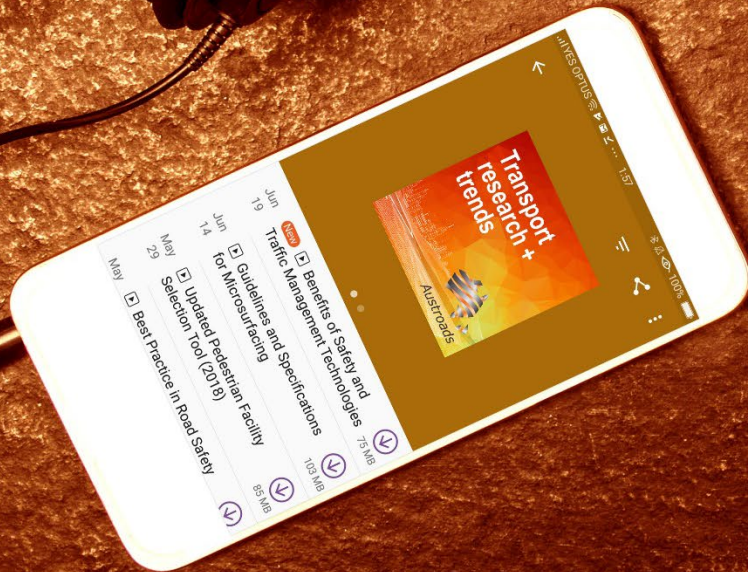


Topic	Date
C-ITS Compliance Assessment Framework for Australia and New Zealand	11 December
Level of Service Requirements for Freight on Rural Roads and Refinement of Heavy Vehicle Roughness Band Index	31 January

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