



# **A National Climate Intelligence Capability for Australia: *Current Developments and Future Directions***

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[www.csiro.au](http://www.csiro.au)



3<sup>rd</sup> International Climate Change Adaptation Platform Meeting,  
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# Current situation

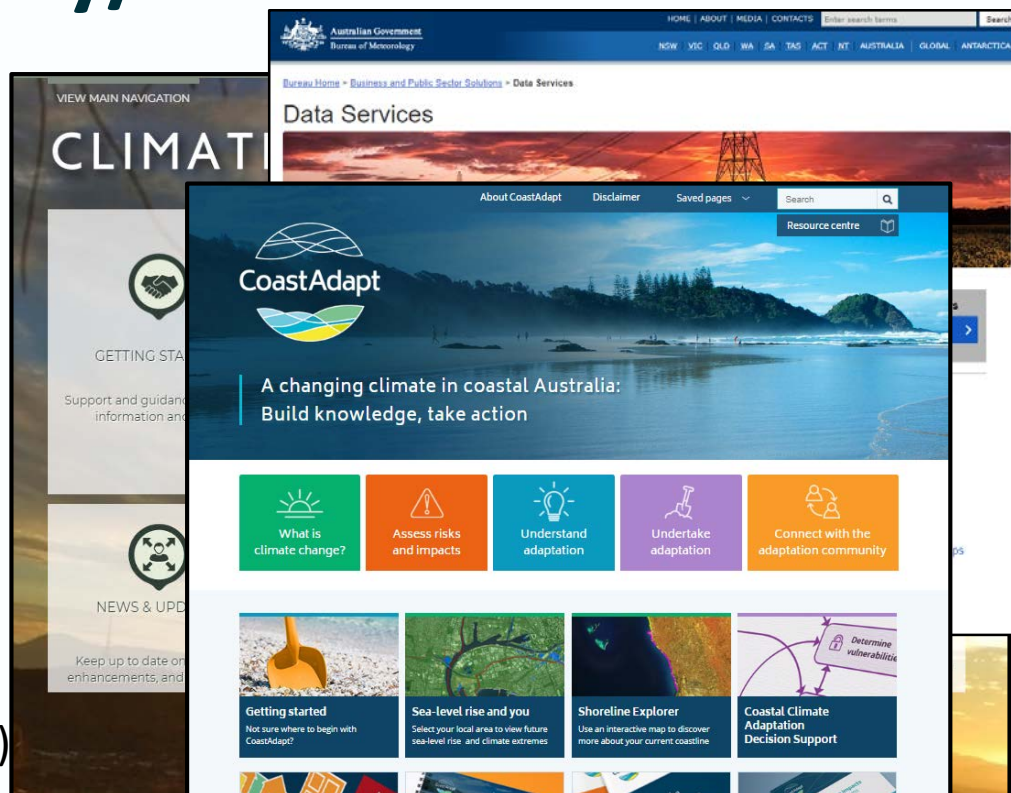
- At national level, multiple digital (web-based) and domain (people-based) platforms and associated climate services, with varying degrees of governance, maturity, capability, scope, funding support/resourcing, viability and success (market impact)
- Incomplete coverage of user needs, somewhat fragmented with limited inter-operability and strategic alignment:
  - Public and private sector market offerings are out-of-step and with ill-defined roles and responsibilities to avoid duplications/gaps
  - Domain capability (core skills/functions) for most part characterises or otherwise defines perspective/focus as to entry point for informing decision-making, and thereby characterises context and associated functionality and utility of platforms
- Limited uptake and application by users
  - Data and modelling constraints (n.b. climate extremes)
  - User capacity constraints
  - Inappropriate/incorrect applications beyond limitations of the data
  - Geo-spatial referencing, model selection, inconsistent framing and managing uncertainty (n.b. black box issues?)
  - ‘Spaghetti junction’ of resources (n.b. confusion/end-2-end user needs!)
  - Science centred-decision informed??

# Current situation

- User needs changing rapidly, public and private driven by existential impacts/risk from current and future climate change:
  - General community awareness through mass media/social media (n.b. increasing frequency/intensity of natural disasters)
  - Risk awareness/management (adaptation, mitigation and disaster management) by state/territory and local government
  - TCFD reporting by financial services sector and increasing interest of the Reserve Bank, regulators, ratings agencies etc
  - Emerging 'green' investment demand (opportunities) from fund managers
  - Enhanced access to available data, enhanced visualisation and geo-spatial referencing, enhanced guidance and technical support, tailored/context specific
  - Specific needs of Australian indigenous communities (role of traditional knowledge?)
- Compelling case for development of a 'best practice' platform approach to national climate intelligence capability for Australia, with emphasis on 'seamless' integration of both digital (web-based) and domain (people-based) service delivery across multiple timescales, hazards and sectors
  - Codesign/co-production
  - Decision centred – science informed!!

# Public Sector Capability/Platforms

- National Environmental Science Program (NESP) Earth Systems and Climate Change (ESCC) Hub
  - Climate Change in Australia (CCiA) ([climatechangeinaustralia.gov.au](http://climatechangeinaustralia.gov.au))
- Bureau of Meteorology (BOM)
  - Climate Data On-line ([bom.gov.au](http://bom.gov.au))
- National Climate Change Adaptation Research Facility (NCCARF)
  - CoastAdapt ([coastadapt.com.au](http://coastadapt.com.au))
- Coastal Risk Australia (Frontier SI/NGIS)
  - ([coastalrisk.com.au](http://coastalrisk.com.au))



# Public Sector Capability/Platforms

- Various other research programs also delivering science (informing services) e.g. Centre for Climate Extremes (CLEX), and multiple state entities (govt/universities) delivering regional projections and associated services/knowledge brokering, incl:

- NARCLIM (NSW)

[climatedata.environment.nsw.gov.au/](http://climatedata.environment.nsw.gov.au/)

- Climate Futures Tasmania

[climatefutures.org.au/](http://climatefutures.org.au/)

- Long Paddock (Qld)

[longpaddock.qld.gov.au](http://longpaddock.qld.gov.au)

- VCP19 (Vic)

[www.climatechange.vic.gov.au](http://www.climatechange.vic.gov.au)  
[climatechange.vic.gov.au](http://climatechange.vic.gov.au)



# Private Sector Capability

- Multiple providers with varying levels of (digital and domain) capability (data, tools, tech support) servicing public and private sector needs
  - Agile, responsive, tailored, 'cost-effective' service delivery
  - Historical/current climate v future climate
- Big (international) and SME (local) consultancies, including purpose built consultancies
- Bigger corporates have different business models:
  - Capability developed internally
  - Strategic partnerships/acquisitions (e.g. QBE/Jupiter, Moody's/427, IAG/NCAR)
  - Climate intelligence 'arms race'??
- Role of public sector entities (e.g. CSIRO, BOM, Geo-Science Australia, universities):
  - Trusted (legitimacy) and authoritative (credible) source of science data/information
  - Standards/peer review/QAQC
  - Public good v private benefit (market failure?); open source v proprietary protected; who pays, how? Public-Private Partnerships?
  - Innovation pipeline – emerging technologies (NextGen/CMIP6 projections, decadal predictions, attribution science, CC configured cat/finance models etc)

# Science to services/policy to practice interface:

- Electricity Sector Climate Information (ESCI) project:
  - Funded by Australian Government (DoEE)
  - Delivered by partnership b/w CSIRO, BOM and Australian Energy Market Operator (AEMO)
  - Science-based evidence to inform climate change risk to the National Electricity Market
  - Focus on risks related to:
    - Resilience and Reliability (infrastructure)
    - Generation and Supply (transmission and distribution)
    - Climate variability and (current/future) change
    - Mean and extreme condition (n.b. compound/coincident extremes)
  - Standard methodologies/frameworks
    - Data acquisition/application (multiple lines of evidence)
    - Risk assessment
  - CCiA platform delivery
  
- Climate Measurement Standards Initiative (CMSI)
  - Industry-led (*decision centred*) partnership with researchers (*science informed*)
  - Australian Sustainable Finance Initiative (ASFI) n.b. Australian Govt (DoT&F, RBA, APRA, ASIC)

# Climate Measurement Standards Initiative

## What?

An industry-lead collaboration between insurers, banks, scientists, regulators, reporting standard professionals, service providers and supporting parties to develop open-source technical business and scientific standards for climate physical risk projections of future repair & replacement costs of residential and commercial buildings and infrastructure in Australia

A roadmap for scientific research and development, data collection and tool development



# Why?

**TCFD**

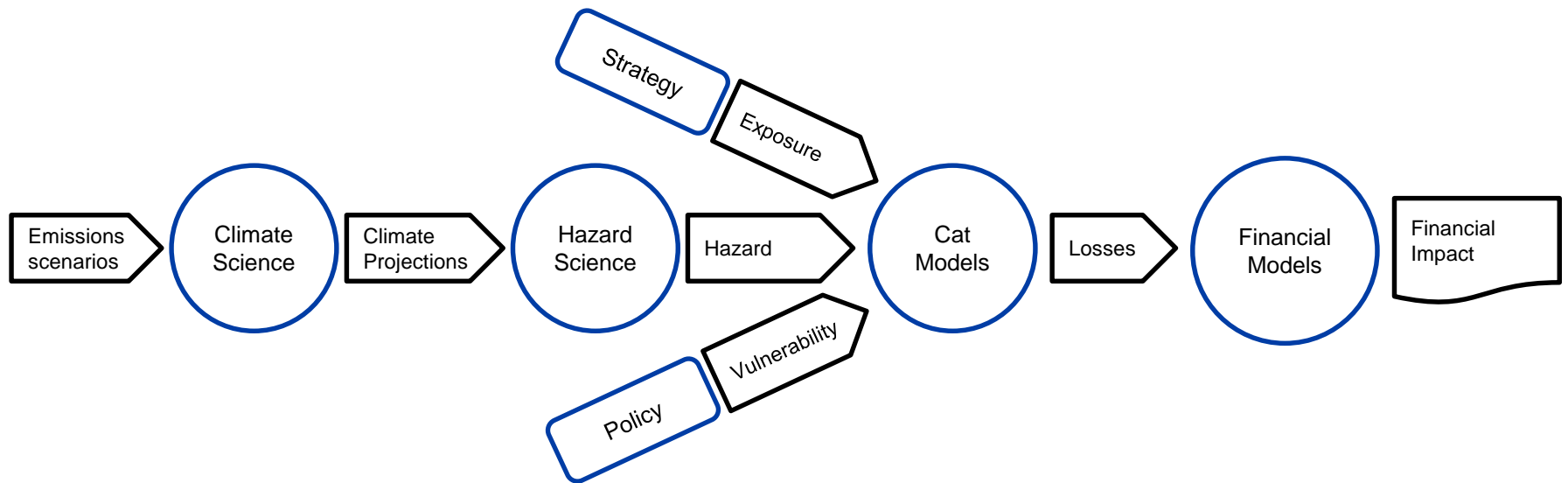
**for insurers and  
banks**

**TCFD has low  
barriers to entry**

**... but requires  
significant  
interpretation**

**Insurers not the  
same as oil  
companies**

# Why?



**Integrate the science and the models**  
**Significant number of choices made**

# Why?

**Reduce the risks and costs of disclosure for companies**

**TCFD Scenario Analysis in Annual Reports**

**Also address sovereign/sub-sovereign risk for Australia**

Confidence through

- standards rather than more disclosure
- comparability between insurers and banks
- appeal to authority
- enabling widespread TCFD adoption

Guide for developers and model vendors

Focus research & development on what we actually need

Meaningful and practical regulation

# How?

**Six month  
Sprint**

## Steering Group

- Scope & Members
- Funding ~\$10k each

**Publish  
Draft for  
Consultation**

### Financial Disclosure Committee

- What should we be disclosing under the TCFD?

### Scientific Committee

- How can we do that today?
- How can we do that in the future?
- How do we get there?

### Applications Committee

- Fully specify three scenarios for modelling

**Iterate**

# Who?

## Steering Group

- QBE, Suncorp, Munich Re +
- Westpac, NAB +
- Climate-KIC, IGCC

ICA Reps

Company Reps

### Financial Disclosure Committee

- Accountants, Actuaries, Investment/ESG Analysts

### Scientific Committee

- Climate Scientists: ESCC Hub: CSIRO, BoM, UNSW
- Hazard Scientists
- Cat Modellers

### Applications Committee

- CAT model vendors
- Consultancy firms

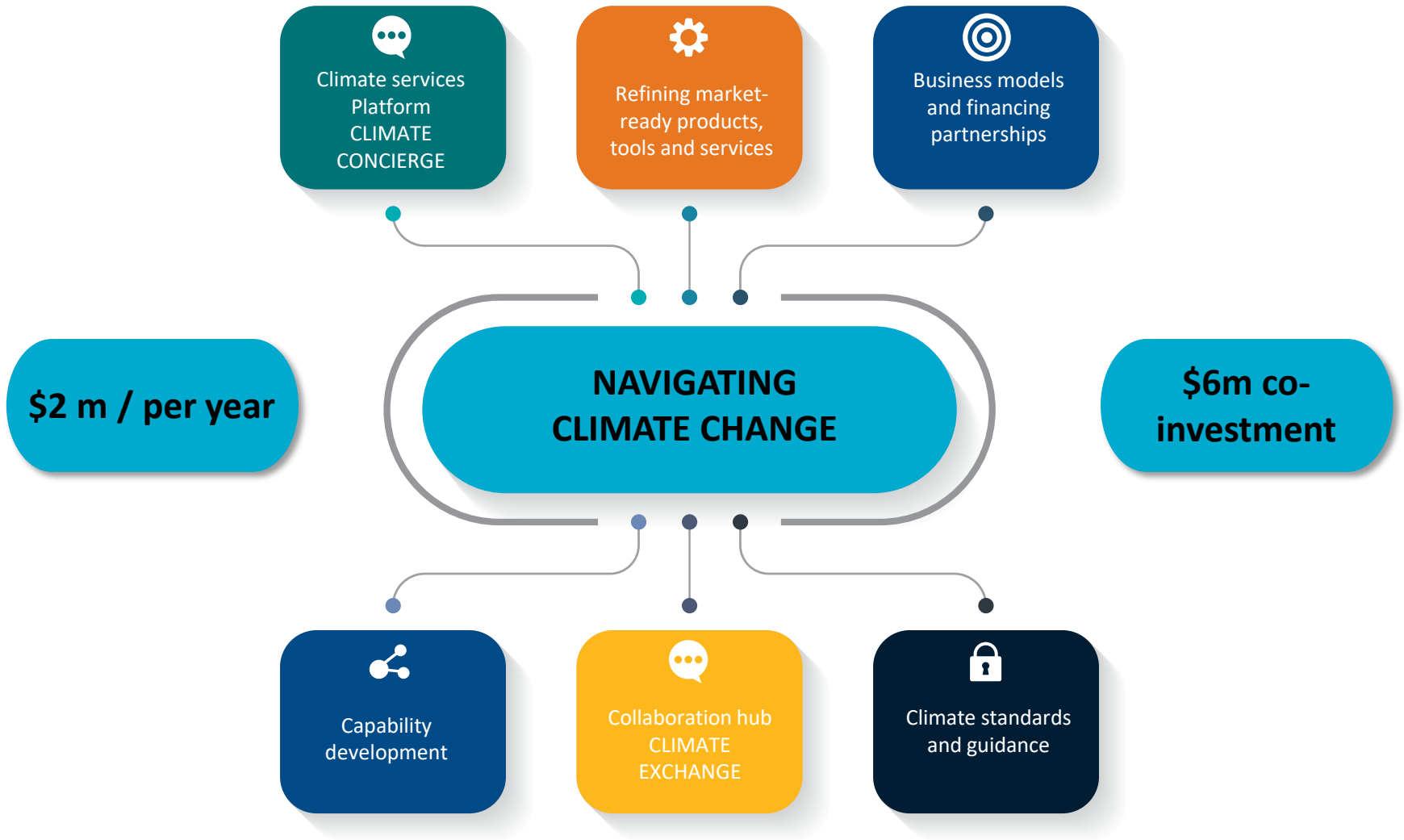
## Observers

- APRA, ASIC, RBA
- Rating Agencies

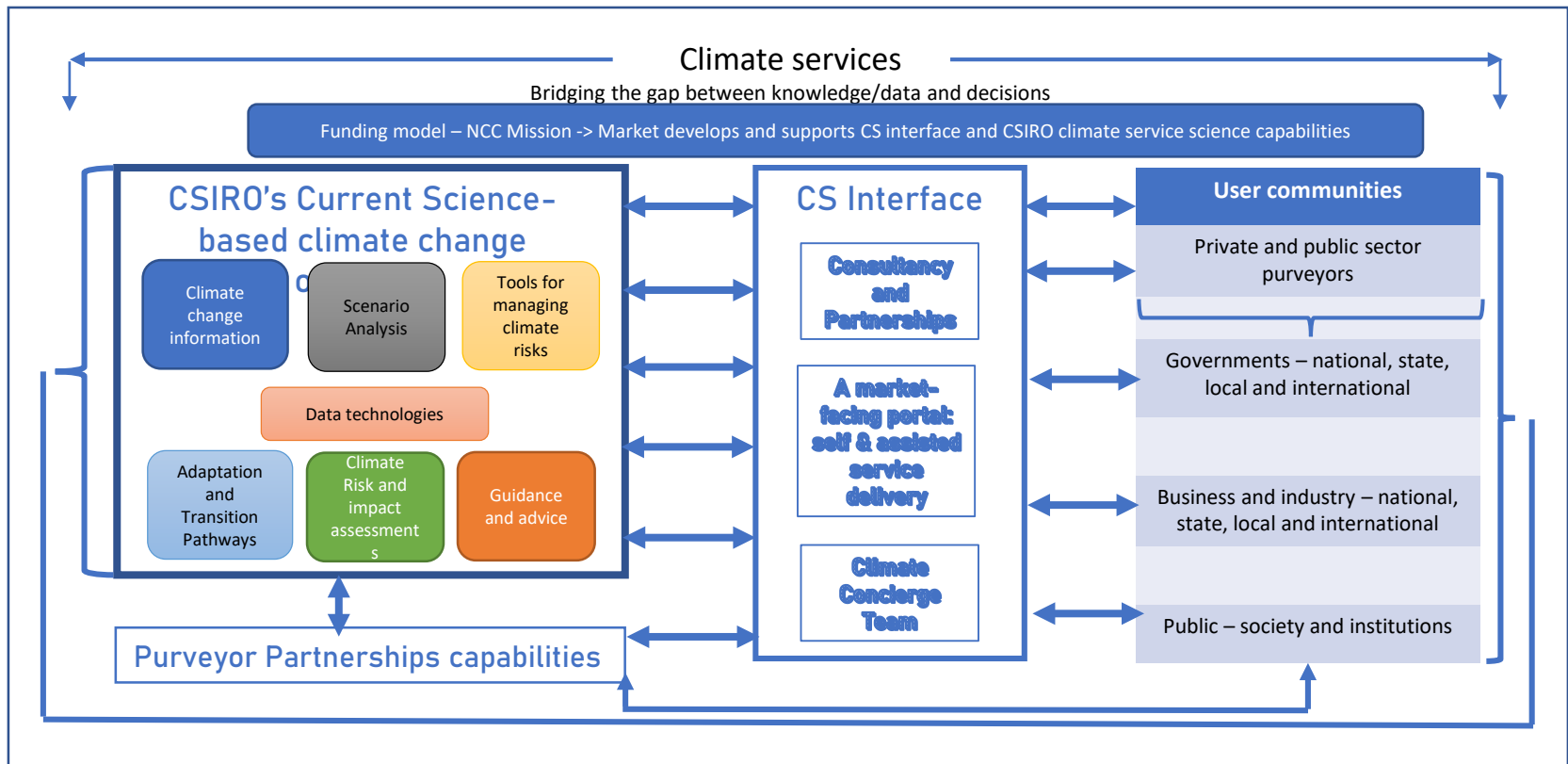
ASFI

# New developments/future directions

- National Disaster Risk Reduction Framework..... *work in progress*
  - National Disaster Risk Management Framework/National Disaster Risk Information Services Capability (NDRISC)
    - Climate Compass (public sector climate risk framework)
    - National climate risk database and services
- Bureau of Meteorology 'climate services' .....*work in progress*
  - Sector specific 'Business Solutions':
    - Energy
    - Agriculture
    - Water (new national hydrological projections in 2020)
- CSIRO 'Climate Change Services' ..... *work in progress*
  - Navigating Climate Change (NCC) Mission



# CSIRO Navigating Climate Change Mission (draft)





# New developments/future directions

- National Climate Science Advisory Committee (Federal Government/DoEE) development of a new national climate science strategy for Australia
- To include: Strategic development of a National Climate Services Capability for Australia
  - NESP ESCC Hub is developing a discussion paper to inform this strategy
    - Input from multiple stakeholders including CS (next/end) users and providers across public and private sector
  - EC-funded project Knowledge Exchange for Climate Adaptation Platforms (KE4CAP) provides unique opportunity to leverage/share learnings from the EU experience, other bi-lateral and associated partner countries (...and many thx Roger for the opportunity!!)
  - Proposed Australian Bi-lateral Knowledge Exchange workshop:
    - March 2020
    - Local partners: NESP ESCC Hub (CSIRO/BOM/universities) and CSIRO Climate Science Centre (NCC)
    - Objectives/outcomes to inform development of NCSAC National Climate Services Capability (and by association CSIRO NCC)

.....and then there's the Pacific.....another order of magnitude in terms of complexity!!!!???

.....role for the AP-Plat Partnership re coordination, guidance, standards etc???

.....discussion for another day???

# Thank you

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Australian Government

Department of Foreign Affairs and Trade

