

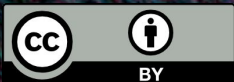


Australian Research Data Commons

National Bushfire Research Infrastructure

Presenters: Adrian Burton
Sheida Hadavi

31/03/2021



The Australian Research Data Commons is enabled by NCRIS.



- 24 National Facilities
- Infrastructure beyond the scope of individual research institutions



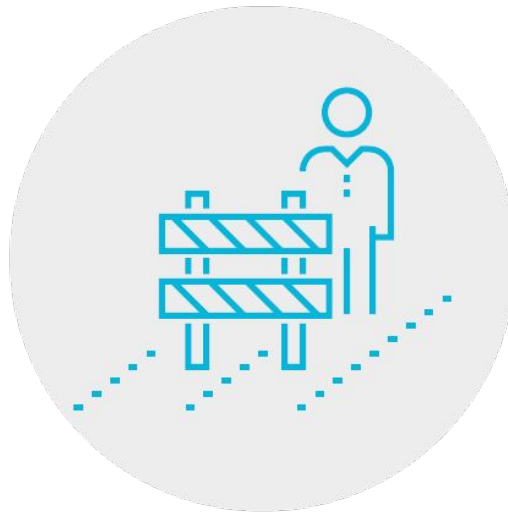


the sector to achieve our research data commons

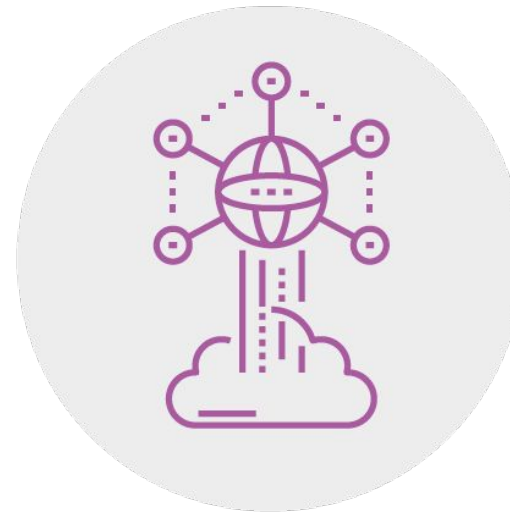
Translational research data challenges program



START
WITH A SOCIETAL
PROBLEM



IDENTIFY
THE DATA
CHALLENGE



BUILD
AND APPLY DIGITAL
INFRASTRUCTURE

Program process: Bushfire Data Challenge



Sep-Nov 2020: Targeted consultation
to align with national bodies

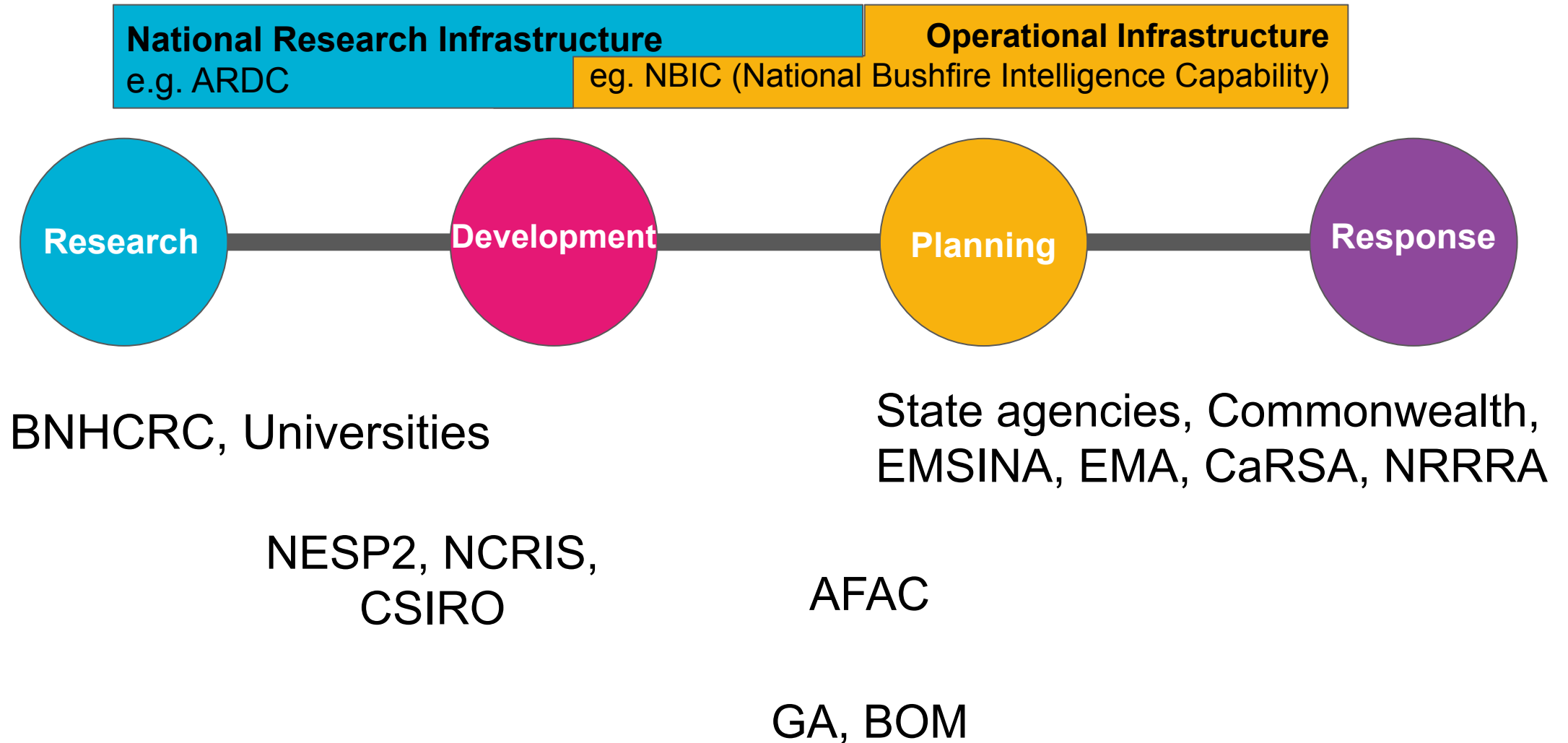
Dec 2020: Participatory design workshops
to build collaborative scale

Mar-Apr 2021: Roundtables
to have focused discussions

Collaborations from all the national bodies and initiatives:

- AFAC
- BNHCRC
- BOM
- CSIRO
- Commonwealth departments
- EMA
- EMSINA
- GA
- NCRIS facilities
- State agencies
- Universities

Operations and infrastructures scope

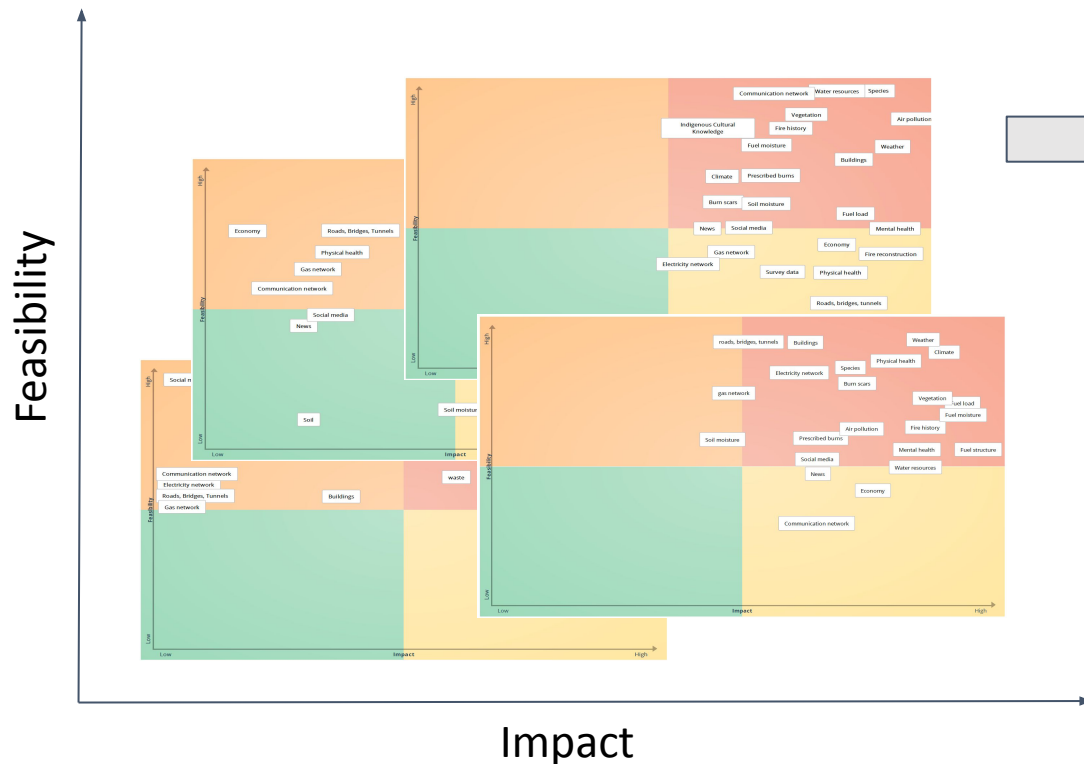


Participatory design workshops

- 5 workshops in December 2020
- 70 attendees from all key institutes
- great outcome and feedback

- Large gap for a national bushfire data infrastructure
- Many opportunities for ARDC

→ **2 Phases of bushfire data challenges**



Phase 1: Modelling fire behavior:

aggregating models and data on:

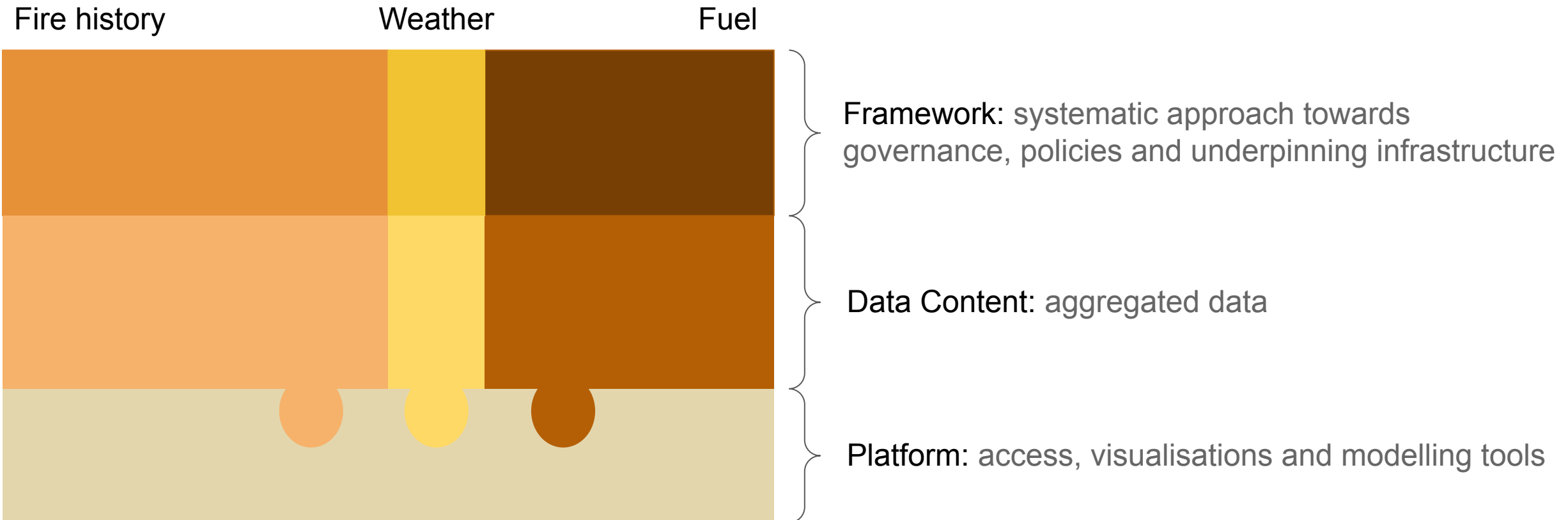
- Fire history
- Fuel
- Weather

Phase 2: Modelling impact:

aggregating models and data on:

- Health (physical and mental)
- Smoke and climate
- Flora and fauna
- Urban infrastructure

Fire modelling data infrastructure framework



Fire history data layer

- Collecting all the existing fire history data from state agencies; addressing capability of the data pipeline
- Defining standards for data aggregation, access, sharing, governance, licensing
- Integrating and validating remote sensing data

Fire history:

- **Burnt area extent**
- Fire intensity
- Fire progression

Discussion underway: Partnership with EMSINA and GA to enable this data layer.

Fuel data layer

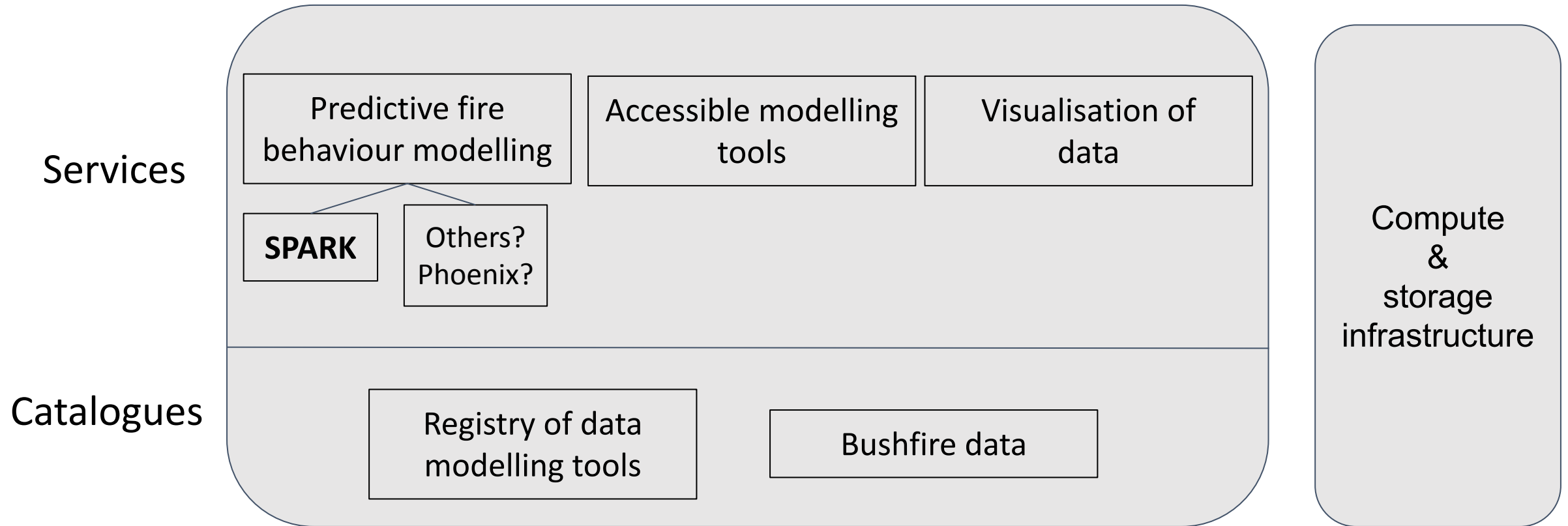
- Collecting all the existing fuel data and addressing capability of the data pipeline
- Defining standards for data aggregation, access, sharing, governance, licensing
- Integrating and validating remote sensing data

Fuel data:

- type
- height
- moisture
- time since last precipitation
- structure

Discussions underway: Partnership with DAWE, TERN, AFAC and states to enable this data layer.

Potential platform components

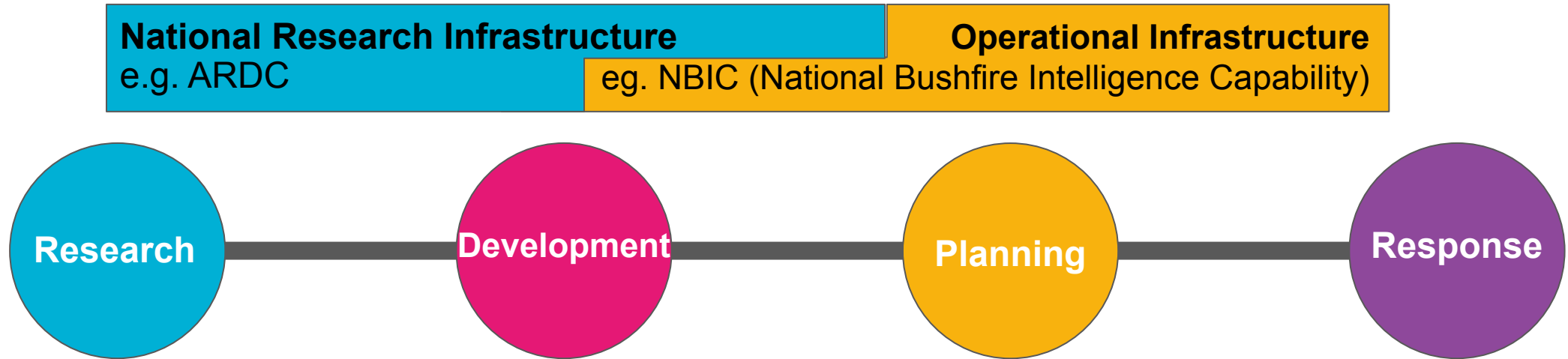


Discussions underway: Partnership with CSIRO, AFAC and states to enable this data layer.

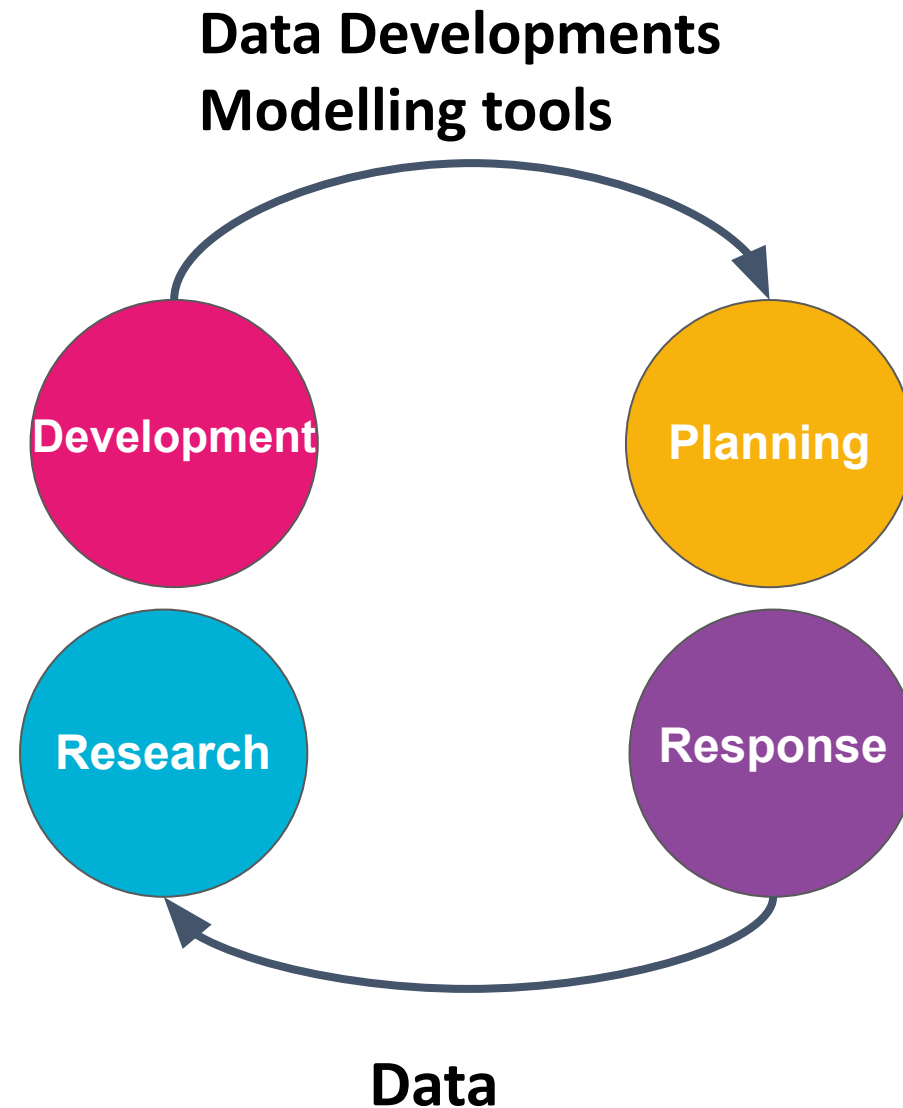
ARDC contributions

- Dedicated business analyst and data architect to the project
- Expertise in defining a framework
- Infrastructure support (if needed)
- ARDC co-investment ~ \$2m (Letter of intent under development with Minderoo)

Dovetailing research and operations infrastructure



Research - public sector infrastructure partnership



Relevance for EM Community

Activities

- Facilitation of development on good practices for fire data nationally.
- Resources for states to respond to these best practices.
- Data integration support
- Establishing a forward strategy and framework for fire history data with the state agencies and GA/BoM

Outputs

- Improved fire history data on a national level
- Improved fuel data on a national level
- Fire Behaviour Modelling Platform

Outcomes

- Ongoing development of better tools and models for EM community
- Ongoing development of data layers for EM community
- Ongoing research-public sector infrastructure partnership

Next steps


- Aiming to kickoff the project in July 2021
- Next steps:
 - Defining project governance
 - Defining work packages of the project together with our partners
 - Evaluating and contracting the project
- Formalising letter of intent with Minderoo to co-invest in this program.



Australian Research Data Commons

Thank you

www.ardc.edu.au

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