

What makes a good fire simulator?



RESEARCH TEAM

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Project duration: 12 months

Background

Fire simulators are key tools that are relied on for high-consequence tactical and strategic decisions in all Australian states and territories. They are deeply integrated into the practices of fire management agencies, and in some cases, their use is relied upon for legislated reporting. They are also used by researchers, private industry and non-government agencies such as power companies and forest estate managers. Despite their widespread use, there are substantial knowledge gaps relating to how existing simulators are currently being used, the standards required to make simulators 'fit for purpose', and user priorities for simulator improvement or development. These questions go beyond the accuracy of any individual simulator. Guidance is needed to support the development – and use – of a range of models and use cases.

SUPPORTING ORGANISATIONS

Country Fire Authority
NSW Rural Fire Service
AFAC

Project description

The overall aim of this project is to support the continued development and use of fire simulators, by understanding the nature of current usage.

This social research project aims to undertake a deep engagement process within the sector to understand better 'what makes a good fire simulator?'. This involves talking to the varied users of fire simulators to understand what they are used for and how, along with their perceptions of strengths, weaknesses, gaps and needs. The project will provide guidance on how we can improve systems to benefit all users in the future. In particular, the research aims to provide information tailored to specific use cases, against which development decisions can be evaluated.



Intended outcomes

Primary outcomes

- The use of project findings by AFAC Predictive Services to help refine Spark development and ensure it meets end-user needs
- The use of project findings by simulator users and developers to evaluate current practices and gaps, justify changes to simulators, guide the development of new versions of simulators and simulation methods and help interpret predictions and outputs.

Secondary outcomes

- An understanding of current drivers and effects of simulator use in Australia and a high-level understanding of the international context
- A clear set of standards to be used by simulator developers to ensure a robust and quality product
- An understanding of issues, gaps and priorities around the next generation of fire simulators
- Identification of pathways to expand this process to other natural hazard impact models.

Ultimately, this project will provide evidence to support investment in long-term programs for risk mitigation.

Translation and implementation potential

This is a highly applied research project. Our findings about the nature of fire simulator use and the needs of users is intended to be fed directly to agencies and developers to support improved management outcomes.

The key implementation pathway is via a 'ready reckoner' that we plan to deliver for fire simulator users, featuring criteria for specific use cases, for which users can specify performance. However, we also expect end-users will benefit from other project outputs including a literature review on the use and development of fire simulators, and the results of interviews, workshops and questionnaires targeted at fire simulator users.

Further information

For full project details head to: <https://www.naturalhazards.com.au/research/research-projects/what-makes-good-fire-simulator>

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