

NSSN Bushfire Smart Sensing Workshop

19th October 2021

Advanced smart sensing technologies can detect the earliest signs of fire, improve situational awareness for firefighters, and provide valuable data for post-fire recovery efforts. By combining world-class research across our network, the NSSN, its members and partners will develop technologies that enable more effective preparation, response and post-fire recovery efforts.

NSSN Bushfire Smart Sensing Grand Challenge

In line with its purpose of developing and applying smart sensing technologies for the benefit of Australia, the NSW Smart Sensing Network has established the Smart Sensing Bushfire Grand Challenge.

The Bushfire Grand Challenge is a multi-year initiative with several components that collectively will advance the development and use of smart sensing for bushfire preparation, response, and recovery.

The components of the challenge are Bushfire Smart Sensing Innovation Roadmap 2030, the Smart Sensing Research Program and Research Enablers.

There are many opportunities to develop smart sensing technologies for bushfires including these:

Combining remote and in-situ sensing to accurately **Assess and Monitor Fuel and Micro-Climates**

Landscape Recovery Mapping – plant regrowth, species diversity, erosion

Monitoring Personal and Community Exposure to smoke and toxic fumes

Monitoring Water Quality – ash, sediment, nutrients affecting drinking water, river and estuarine health

Fire Detection – remote and in-landscape sensing

“**Bushfire Digital Twin**” to enable real-time, shared, situational awareness

Tree Mapping and Assessment - prioritising dangerous trees that prevent access after fires

Critical Infrastructure Condition Monitoring and Assessment

Optimising sensor placement and drone deployment to maximise information utility at lowest cost

Smart Sensing Workshop – 19th October 2021

The NSSN will be convening an invitation-only workshop to provide an opportunity for government, industry and researchers to come together to progress smart sensing innovation in Australia.

Leading federal and state agencies and firefighting organisations, local government, NSSN universities, national research organisations, industry and philanthropic organisations will explore priorities and specific smart sensing opportunities.

The workshop format is virtual (zoom) and will feature co-design activities with breakout groups focused on various aspects of smart sensing for bushfires.



Workshop Objectives

1. Start the development of the Bushfire Smart Sensing Innovation Roadmap 2030.
The workshop will be the first step in a series of activities to develop and publish a roadmap that can help align priorities and investment in Smart Sensing innovation.
2. Identify Smart Sensing research topics, potential projects and collaborations.
The intent is that the workshop results in project ideas and an intent to collaborate on developing those ideas further. NSSN will then work with the collaborators to explore resources and funding options. Funding options may include the NSSN Grand Challenge Fund, various NSW Government funds including the NSW Bushfire Fund, ARC funding and others.

Breakout Groups:

1. Early Fire Detection
2. Landscape and Vegetation Assessment
3. Air Quality and Smoke Exposure
4. Realtime Fire Response
5. Water Quality
6. Critical Infrastructure Assessment

Draft Agenda

Time	Duration	
1300	15 mins	Welcome and Opening Remarks
1315	45 mins	Keynotes
1345	60 mins	Panel Discussion - "Bushfire Smart Sensing Opportunities"
1445	10 mins	Break
1455	15 mins	NSSN Bushfire Smart Sensing Grand Challenge
1510	45 mins	Breakout co-design sessions
1555	45 mins	Breakout report back and group discussion
1640	15 mins	Next steps
1700		Close

Next Steps

1. Mark 19th October 2021 - 1 pm to 5 pm AEDST in your calendar
2. Register your interest in attending the workshop by completing the [survey and workshop registration](#) or contact Mr Peter Runcie (peter@natirar.com.au).

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