

Bridging the Gap

Aligning Agencies to Accelerate Wildfire Innovation

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“Fire does not respect boundaries, standards, or policies – yet our institutions do.”

The time has come to bring alignment, science, and innovation together under a unified global wildfire strategy.

Introduction: Innovation Without Alignment Is Smoke Without Fire

Across continents, wildfire has evolved into a global emergency threatening ecosystems, communities, and economies. Each year, nations from the United States to Brazil to Greece and Canada face longer fire seasons, deeper droughts, and an expanding wildland urban interface. Yet, despite the shared urgency, the systems that manage wildfire are fragmented and misaligned.

From policy to funding, from culture to statute, the way we approach wildfire innovation remains siloed. Agencies operate independently, standards are inconsistent, and innovators are forced to navigate duplicative, expensive, and disconnected evaluation processes. In an era when wildfires cross borders, innovation has not kept pace because our institutions haven't learned to cross them too.

The Fire Tech Innovation Summit is a proposed solution – an initiative designed to break these structural barriers and create a single operational proving ground where agencies, innovators, and scientists can evaluate emerging technologies

together. But to make that vision real, we must first confront the fractures holding progress back.

The Problem: Fragmentation at Every Level

In the United States alone, wildfire suppression responsibilities are divided between the Department of the Interior (DOI) and the U.S. Forest Service (USFS), with five separate fire agencies under their authority. Layered on top of that are 50 state fire organizations and more than 26,000 registered local fire departments, each operating under its own policies, budgets, and training standards.

This disjointed structure means innovators must repeatedly test the same technology under different standards, at great cost. For small companies, these repetitive hurdles often become fatal to development. Contrary to public belief, fire innovation is not cheap, easy, or fast – it's expensive, risky, and capital-intensive. Without consistent validation pathways or unified standards, private sector innovators burn through funding cycles trying to meet conflicting requirements instead of improving technologies.

This problem doesn't stop at the U.S. border. Wildfire management in Canada, the European Union, and South America faces similar challenges – fractured systems, isolated research initiatives, and little interoperability between national or regional standards. Several European nations have advanced aerial suppression and predictive modeling systems, yet international collaboration remains limited to ad hoc agreements.



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In Latin America, rapidly increasing wildfire activity across Chile, Argentina, and Brazil highlights the urgent need for cross-border alignment and shared innovation infrastructure.

The result: a world on fire, but a fire community divided.

Why Multi-Agency Alignment Is Essential

A single agency cannot solve wildfire. Meaningful innovation requires interconnectedness – where public agencies, research institutions, firefighters, and innovators collaborate on shared frameworks that expedite safe, effective adoption.

Multi-agency alignment enables:

1. Shared Standards and Qualification

- Unified testing and evaluation criteria across agencies would eliminate duplicative work and accelerate technology adoption.
- This should include international harmonization between U.S. federal agencies, EU wildfire authorities, Canadian Wildland Fire Management Strategy (CWFMS) stakeholders, and South American environmental agencies.

2. Consolidated Funding and Procurement

- Multi-partner funding can combine agency budgets,

international grants, and private investment to support testing and scale-up phases.

- New procurement mechanisms should reduce monopolistic practices by ensuring equitable access for diverse innovators.

3. A Single Point of Entry for Technology Testing

- Innovators need one physical and administrative location to test prototypes in controlled conditions under supervision from multiple agencies.
- This model not only decreases cost and redundancy but increases transparency and data sharing.

4. Operational Integration with Firefighters and Incident Management Teams

- Ground crews and incident teams must be part of the testing process—from concept through field validation—ensuring operational relevance and safety.

5. Global Collaboration

- Incorporating partners from the EU, Canada, Australia, South America, and other wildfire-prone regions fosters shared data models and interoperable technical standards.

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- Wildfire science, suppression chemicals, unmanned aerial systems, and predictive analytics all benefit from collective, open-data frameworks.

The Fire Tech Innovation Summit: Turning Strategy into Action

The Fire Tech Innovation Summit is not a conference – it is a call to action. It proposes a functional proving ground that merges policy, research, and operations.

The Summit would:

- Convene DOI, USFS, CAL FIRE, and key local fire agencies, with representation from international counterparts such as Natural Resources Canada, the European Forest Fire Information System (EFFIS), and South American fire authorities.
- Utilize controlled burn environments and test ranges to validate technology under realistic operational stress.
- Include participation from incident management teams, researchers, and private-sector innovators.
- Generate standardized performance data to inform agency policy, improve qualification pathways, and streamline acquisition processes.

By embedding firefighters and evaluators in the testing cycle, the Summit ensures that new technologies are shaped not by theory alone, but by real-world application. This integration closes the gap between innovation and field deployment.

Beyond Borders: Building a Global Fire Technology Network

As wildfire behavior intensifies globally, isolated national efforts are insufficient. The Fire Tech framework envisions a network where U.S. agencies coordinate with the European Union's Civil Protection Mechanism, Canada's National Wildfire Coordinating Group, and South American firefighting initiatives to create a shared innovation ecosystem.


This global collaboration could synchronize qualification standards, integrate real-time data platforms, and enable cross-country pilot programs. By engaging international partners, the Summit can also leverage diverse climatic and ecological conditions for comprehensive testing – from boreal to tropical ecosystems – providing holistic insight into performance and adaptation.

Conclusion: From Fragmentation to Firepower

The wildfire crisis is no longer a local or national problem. It is a global systems challenge – one that demands unified action.

For decades, innovators, agencies, and firefighters have been trapped in a cycle of repetition and redundancy, each working toward the same goal in isolation. But fire is indifferent to jurisdiction. Our response to it must be equally boundaryless.

Through multi-agency alignment, standardized qualification, and international collaboration, the Fire Tech Innovation Summit offers a pathway out of fragmentation and into functional unity. We can transform wildfire innovation from concept to capability – ensuring that every dollar spent, every test conducted, and every mission flown brings us one step closer to a safer, more resilient future.

This is not rocket science – but it is science, and it is achievable. 

References

- U.S. Forest Service. Wildfire Crisis Strategy: Confronting the Wildfire Crisis in the West. USDA, 2022.
- National Interagency Fire Center (NIFC). Federal Fire and Aviation Operations Report, 2023.
- CAL FIRE. Strategic Fire Plan for California, 2021.
- Canadian Council of Forest Ministers. Canadian Wildland Fire Management Strategy, 2016.
- European Commission. EU Civil Protection Mechanism and the European Forest Fire Information System (EFFIS). 2023.
- National Academies of Sciences, Engineering, and Medicine. Reducing Wildfire Risk.
- Science, Policy, and Innovation. The National Academies Press, 2020.
- Stephens, S. L., et al. "Fire Ecology and Management: Integrating Policy, Science, and Practice." Annual Review of Environment and Resources, 2022.