



FIRE
FORESIGHT

THE CHANGING FACE OF FIRE IN AUSTRALIA

AND HOW TECHNOLOGY
CAN HELP US ADAPT

FIRE FORESIGHT

THE CHANGING FACE OF FIRE IN AUSTRALIA

The capability for **FIRE FORESIGHT** has been forming after many years of working closely within the Australian Forest Industry, providing numerous solutions within our **#digitalforests** projects.

THE FUTURE OF BUSHFIRE DETECTION

Our vision is for a safer, more resilient future & one where technology is used to protect people, place & planet.

FIRE FORESIGHT combines the best of data analytics, IoT, and AI-powered vision to bring you the most advanced bushfire detection system available.



FIRE FORESIGHT

THE SHIFTING FIRE LANDSCAPE

Changing ignition patterns:

- Dry lightning is now a major ignition source
- Fire is in landscapes that historically didn't burn

Fires behaving differently:

- Fires are moving faster, across terrain once considered natural barriers
- Night-time used to give crews a tactical advantage.

Extreme fire weather is more frequent:

- More days of extreme fire danger – earlier in year
- Less time between events, less time to prepare

Cascading effects:

- Fires are colliding with drought, floods, power outages, and strained emergency resources.

"The fires we're seeing today aren't the same as the ones we grew up with — they're faster, hotter, and less predictable."

FIRE FORESIGHT

THE CHALLENGE WITH FIRE AT SCALE

Detection is often delayed:

- Many fires are still reported by the public or spotted by chance hours after ignition.
- Delay can mean the difference between a controllable fire and a regional emergency.

Situational awareness is fragmented:

- Fire managers rely on a patchwork of systems and still face blind spots, especially in remote areas.

Suppression is increasingly reactive and resource-intensive:

- More assets are being deployed to more fires
- Earlier and for longer, with crews are under enormous strain
- We can't just keep scaling up the human response.

Real time data is complex, underused or too slow:

- By the time the data is processed and decisions made, the fire has already moved.

“All of this means the existing models of detection, dispatching, and suppression are under stress.”

FIRE FORESIGHT

HOW DO WE ADAPT?

**“We can’t wait for perfect conditions
— we need to get ahead of the fire.**

That’s where technology comes in.”



FIRE
FORESIGHT

WE'RE HERE TO
PROTECT PEOPLE,
PLACE & PLANET



EARTH OBSERVATION

AI GLOBAL DETECTION & ALERTING



COMPUTER VISION

AI DETECTION & ALERTING



WEATHER MONITORING

REAL TIME METEOROLOGY



DRONE RESPONSE

INVESTIGATION & MITIGATION



ON GROUND SENSORS

AI DETECTION & ALERTING

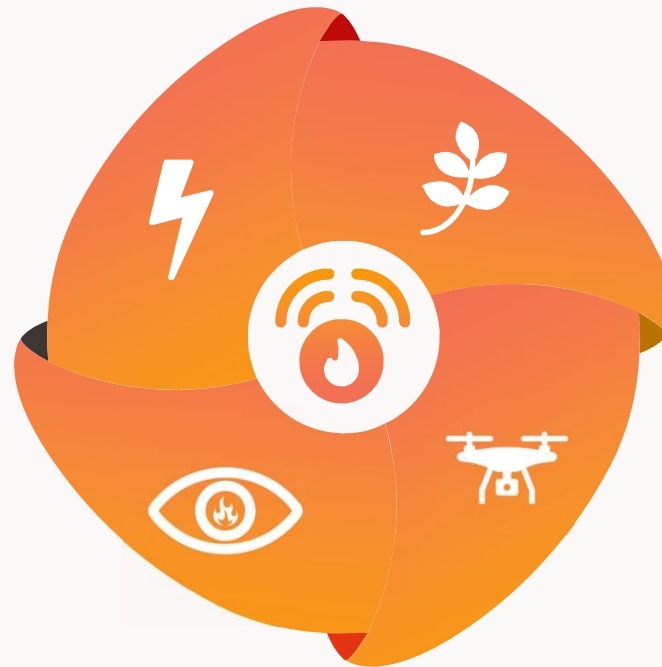


FIRE FORESIGHT

REAL TIME SITUATIONAL AWARENESS



**WEATHER
MONITORING**
METEOROLOGY STATIONS



**MOISTURE
MONITORING**
SMOKE / MOISTURE
SENSORS



**COMPUTER
VISION**
AI DETECTION & ALERTING

**SATELLITE &
DRONE ISR**
FIRE FIGHTING
AWARENESS



WEATHER MONITORING & ON GROUND SENSING



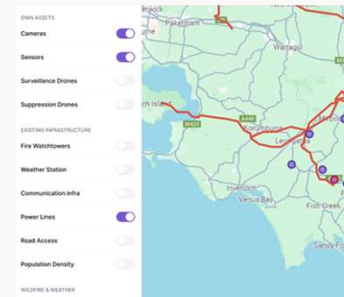
ENVIRONMENTAL SENSING
Ground Sensors measure temperature, moisture and **early indicators of fire-related changes.** Weather Stations, monitor conditions including wind, rain, and temperature



SCALABILITY & FLEXIBLE DESIGN
 Suitable for a range of applications from **small, high-risk zones to expansive, region-wide monitoring networks.** Easily scalable through modular sensor/station additions



ROBUST CONNECTIVITY
 Utilizes LTE, LoRaWAN, or satellite links to **ensure reliable transmission even in remote or challenging environments.** Supports both cloud-based and on-premises data management.



REAL TIME DATA ANALYSIS
 Continuous monitoring delivers up-to-date information on conditions that contribute to wildfire risk. **Data aggregation enables advanced analytics and trend analysis for predictive insights.**



AI FIRE DETECTION CAMERAS



AI POWERED DETECTION

Advanced **computer vision** and machine learning detect and classify **smoke and fire events**. Real-time processing filters false positives and improves detection accuracy



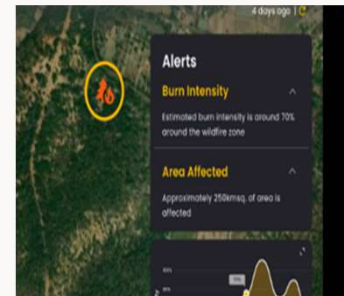
CONTINUOUS 24/7 MONITORING

Automated day and night **surveillance** using thermal and optical imaging. Alerts are validated by **human triage teams** before escalation.



FIRE LOCATION MAPPING

AI pinpoints fire coordinates using Digital Elevation Models and ray-casting techniques. **Integration with GIS** platforms and **emergency response systems**.



AUTOMATED ESCALATION & NOTIFICATION SYSTEM

Alerts sent via SMS, email, web portal, and **emergency response APIs**. Integration with **incident management systems** for faster response.

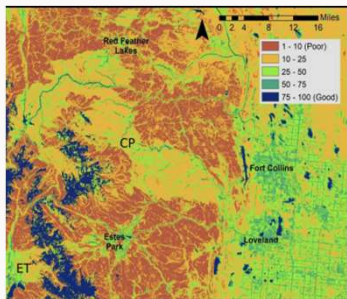


SATELLITE MONITORING



ORBITFY NETWORK

A **network of satellite** having edge computing software - Orbitfy to **generate wildfire insights in under 10 minutes.**



POTENTIAL CONTROL LOCATION

Determine fire containment success from historical wildfire data, topography, fuels, accessibility, suppression difficulty, and anticipated fire behavior.



SATELLITE DATA ANALYSIS

ML/AI data products using data from **various free and private satellites** to provide decision support.



TEAM FIRE FORESIGHT

PUSHING THE BOUNDARIES

XPRIZE Wildfire is a 4-year, \$11 million competition incentivizing the innovation of firefighting technologies that will end destructive wildfires

Indicium Dynamics is leading a team of companies from around the world to focus on the challenge.

FIRE FORESIGHT has recently moved into the semi-finals round of the competition, with real-world testing to occur in mid 2025.

We are the **ONLY** Australian (and Southern Hemisphere) led team to remain in the competition.



XPRIZE WILDFIRE



GORDON AND BETTY
MOORE
FOUNDATION



DRONE INVESTIGATION & RESPONSE



WILDFIRE MANAGEMENT

Pre burn planning assistance, then **conduct burns** with with our incendiary drone or drip torch, with follow up thermography and **post burn analysis**



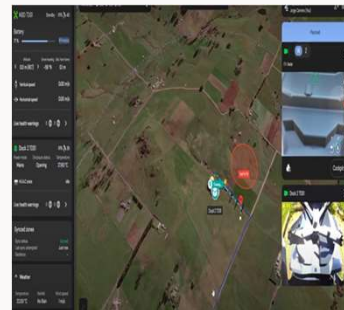
PRECISION AERIAL OPERATIONS

Precision and control for complex aerial tasks via our cutting-edge avionics and sensor systems. Superior maneuverability, with **highly accurate** data collection and operational ease for every mission.



ADAPTABILITY TO HARSH ENVIRONMENTS

Operates in **extreme conditions** with robust designs that support high wind resistance and variable weather conditions. **Safe and stable flights** in even the toughest situations.



ON-DEMAND FIRE REPORTING

Automatically generate comprehensive **post-flight reports** to provide transparent communication and precise data quickly and effortlessly



TEAM FIRE FORESIGHT

TECHNICAL ROADMAP

THROUGHOUT 2025

- AUTONOMOUS DRONE ORCHESTRATION
- DATA DRIVEN TOOL FOR INFRASTRUCTURE PLACEMENT
- TRIANGULATION OF DETECTIONS
- NIGHT AI DETECTION ACCURACY
- AUTONOMOUS LOCATION PINPOINTING
- HYPERLOCAL LIGHTNING DETECTION & LOCATION PREDICTION
- SPACE BASED VERIFICATION
- LIVE SITUATIONAL AWARENESS & INTEGRATION WITH COP/ESCAD
- PRE/POST BURN ASSESSMENTS

FIRE FORESIGHT

THE ROAD AHEAD

**“When fire is everyone’s problem,
solutions must be everyone’s
responsibility.”**



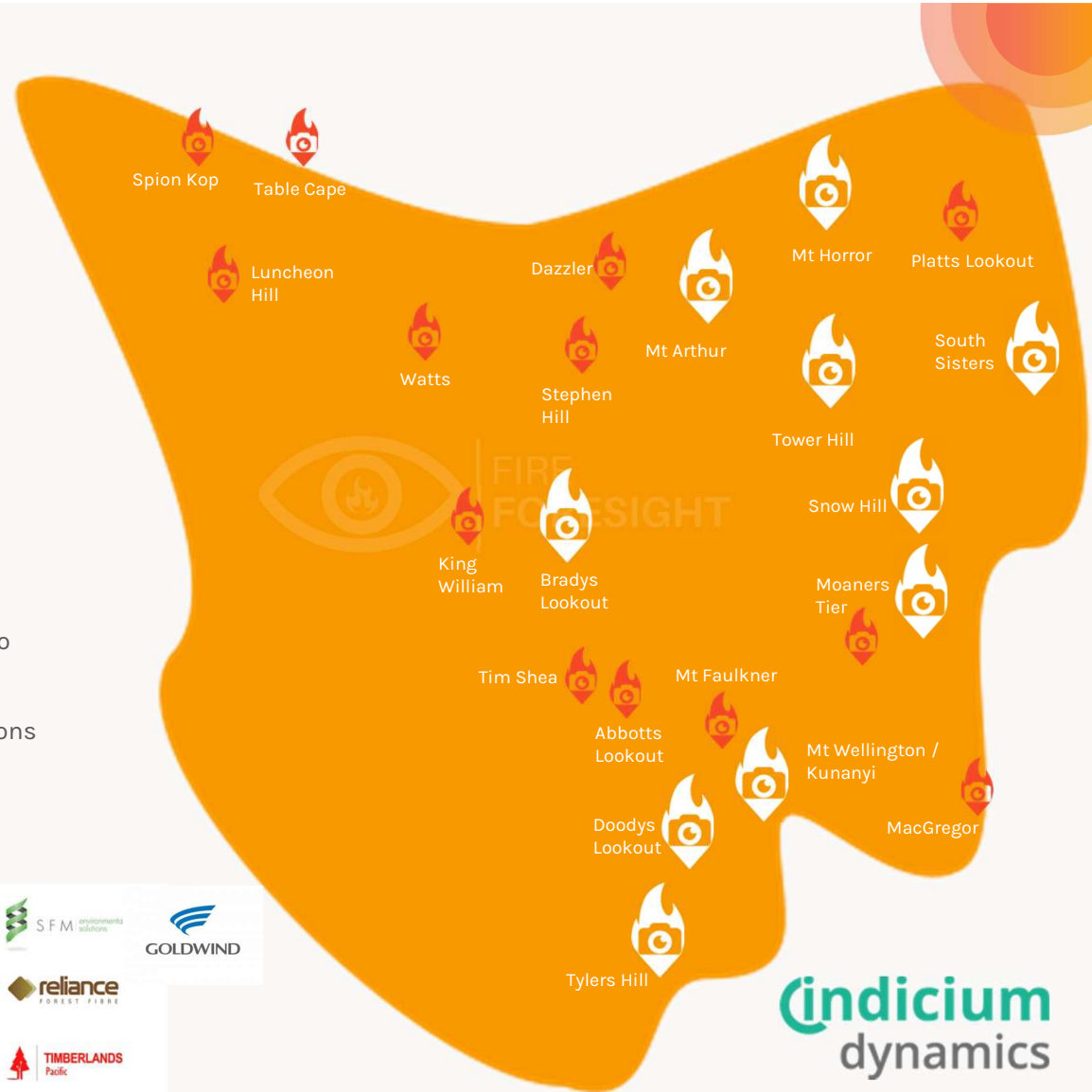
FIRE FORESIGHT

TODAY IN TASMANIA

FIRE FORESIGHTS' leadership of the TIFCN project will see the stakeholder group establish a further 25+ cameras, on existing Lookout Towers around the State.

The Forest Foresight budget includes:

- 30+ FIRE FORESIGHT cameras and ongoing services
- New Communication Gateways installed at each location to enable additional IoT/Sensor capabilities
- An additional pool for up to 30 transportable weather stations
- Up to 200 Fuel Moisture Sensors for deployment to assist forecasting of conditions for prescriptive/planned burns



FIRE FORESIGHT

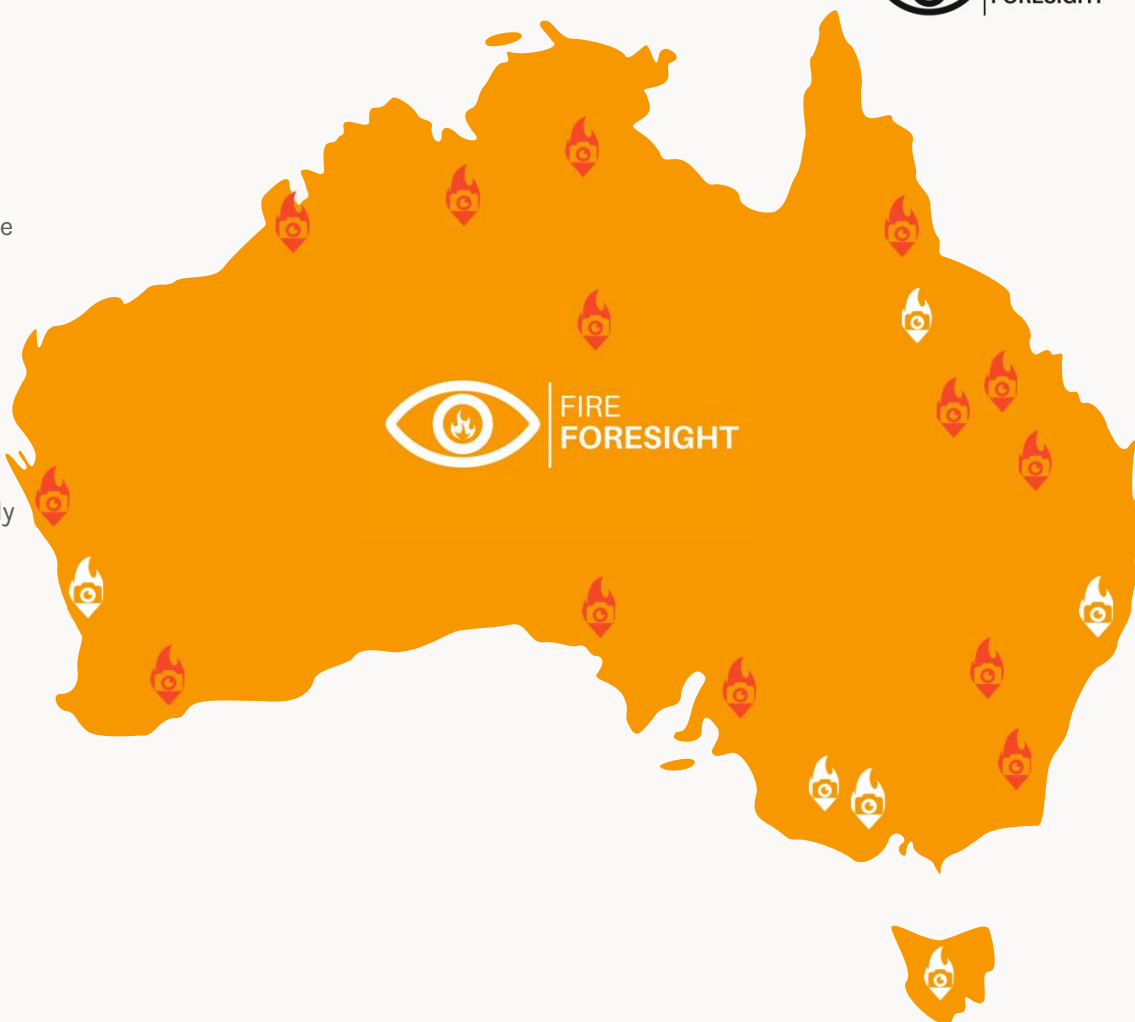
GROWTH PLANS

Australia is a vast bushfire prone continent, and through the support of customers and investors, **FIRE FORESIGHT** is rapidly growing.

Combining our efforts with partners around the country gives us the capability to deploy and maintain our cameras and other fire detection technologies, for use to provide early detection and prompt action nationwide.

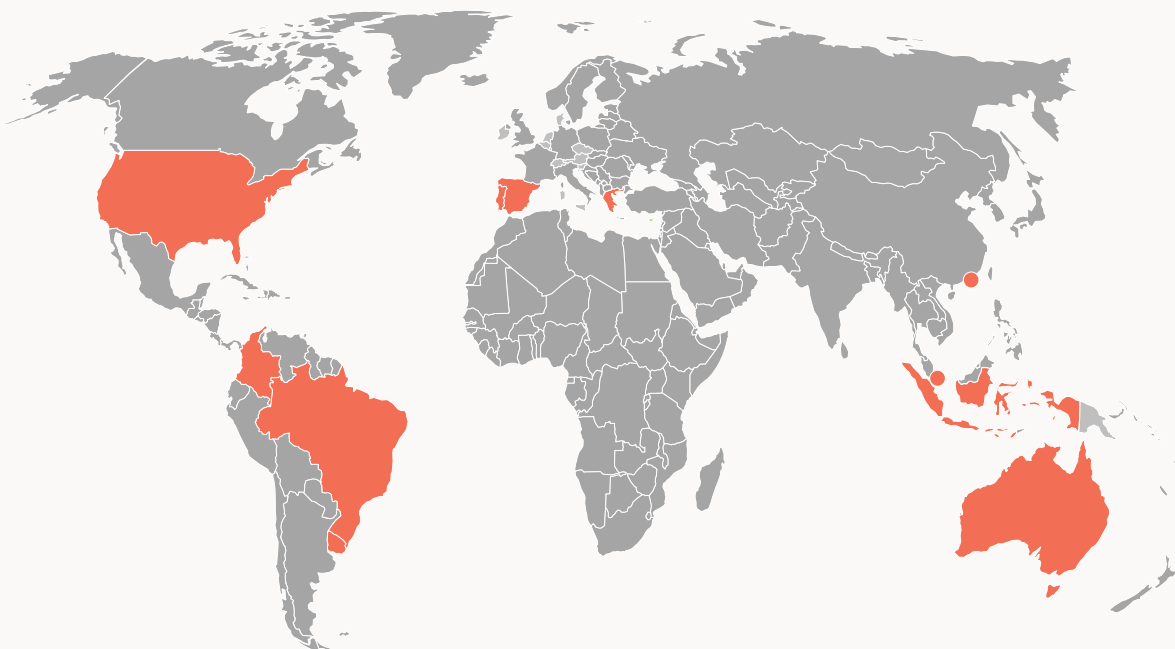
FIRE FORESIGHT - EXISTING TRACTION

- Energy Utilities (VIC)
- Carbon Projects (WA)
- Mining (QLD)
- Forestry (WA)
- USA, Argentina, Columbia, Vietnam, Belgium & Spain



FIRE FORESIGHT

PARTNERS IN 11 COUNTRIES



EARTH OBSERVATION

AI GLOBAL DETECTION & ALERTING



COMPUTER VISION

AI DETECTION & ALERTING



WEATHER MONITORING

REAL TIME METEOROLOGY



DRONE RESPONSE

INVESTIGATION & MITIGATION



ON GROUND SENSORS

AI DETECTION & ALERTING





FIRE FORESIGHT

DETECTION & RESPONSE