



Shire of Dardanup

Committee Meetings

# APPENDICES

Items 12.5.1

# ORDINARY COUNCIL MEETING

To Be Held

Wednesday, 25<sup>th</sup> of May 2022

Commencing at 5.00pm

At

Shire of Dardanup  
ADMINISTRATION CENTRE EATON  
1 Council Drive – EATON

This document is available in alternative formats such as:

- ~ Large Print
- ~ Electronic Format [disk or emailed]  
Upon request.





# **MINUTES**

## **LOCAL EMERGENCY MANAGEMENT COMMITTEE MEETING**

Held on

**Wednesday, 11 May 2022**

At

**Shire of Dardanup  
Administration Centre Eaton  
1 Council Drive - EATON**

This document is available in alternative formats such as:  
~ Large Print  
~ Electronic Format [disk or emailed]  
Upon request.

## TABLE OF CONTENTS

<b>1</b>	<b>DECLARATION OF OPENING/ANNOUNCEMENTS OF VISITORS.....</b>	<b>1</b>
<b>2</b>	<b>RECORD OF ATTENDANCE/APOLOGIES .....</b>	<b>2</b>
2.1	<i>Attendance.....</i>	<i>2</i>
2.2	<i>Observer.....</i>	<i>2</i>
2.3	<i>Apologies.....</i>	<i>2</i>
<b>3</b>	<b>PRESENTATIONS .....</b>	<b>3</b>
3.1	<i>Internet-of-Things (IoT) and Interactive Emergency Networks .....</i>	<i>3</i>
<b>4</b>	<b>CONFIRMATION OF MINUTES/NOTES OF PREVIOUS MEETING.....</b>	<b>5</b>
4.1	<i>Title: Local Emergency Management Committee Meeting Held 9 February 2022 – UPDATED.....</i>	<i>5</i>
4.2	<i>Title: Local Emergency Management Committee Meeting Held 10 November 2021.....</i>	<i>5</i>
<b>5</b>	<b>ANNOUNCEMENTS OF MATTERS FOR WHICH MEETING MAY BE CLOSED.....</b>	<b>5</b>
<b>6</b>	<b>QUESTIONS BY MEMBERS OF WHICH DUE NOTICE HAS BEEN GIVEN.....</b>	<b>5</b>
<b>7</b>	<b>DECLARATION OF INTEREST .....</b>	<b>5</b>
<b>8</b>	<b>REPORTS OF OFFICERS .....</b>	<b>6</b>
8.1	<i>Title: Update Report from Shire of Dardanup.....</i>	<i>6</i>
8.2	<i>Title: Agency Reports – Various.....</i>	<i>10</i>
<b>9</b>	<b>MATTERS BEHIND CLOSED DOORS .....</b>	<b>16</b>
<b>10</b>	<b>CLOSURE OF MEETING .....</b>	<b>16</b>

### Members of Local Emergency Management Committee

- Cr. M T Bennett - Elected Member - Chairperson
- Cr. E Lilly - Elected Member
- Cr. P Perks – Elected Member (Proxy)
- Coordinator Emergency & Ranger Services – Staff
- Representative – WA Police (Deputy Chairperson’s)
- Representative – Department of Communities
- Representative – Department of Primary Industries and Regional Development
- Representative – Department of Biodiversity, Conservation & Attractions
- Representative – Department of Health
- Representative – Main Roads WA
- Representative – Department of Fire & Emergency Services
- Representative – Department of Transport
- Representative – Water Corporation
- Representative – Western Power
- Representative – Aqwest
- Representative – St Johns Ambulance WA
- Representative – Telstra Australia
- Representative – Australian Rail Group
- Representative – ATCO Gas
- Representative – Moore Road Emergency Response Group
- Observer - District Emergency Management Advisor – SW Office of Emergency Management (OEM)

### Terms of Reference

The Terms of Reference for this Committee are located in the Tardis records system – refer to the following link:  
[2021 - ToR - Local Emergency Management Committee](#)

## COUNCIL ROLE

<b>Advocacy</b>	When Council advocates on its own behalf or on behalf of its community to another level of government / body /agency.
<b>Executive/Strategic</b>	The substantial direction setting and oversight role of the Council eg. Adopting plans and reports, accepting tenders, directing operations, setting and amending budgets.
<b>Legislative</b>	Includes adopting local laws, town planning schemes and policies.
<b>Review</b>	When Council reviews decisions made by Officers.
<b>Quasi-Judicial</b>	<p>When Council determines an application/matter that directly affects a person's rights and interests. The Judicial character arises from the obligations to abide by the principles of natural justice.</p> <p>Examples of Quasi-Judicial authority include town planning applications, building licences, applications for other permits/licences (eg: under Health Act, Dog Act or Local Laws) and other decisions that may be appealable to the State Administrative Tribunal.</p>

## DISCLAIMER

"Any statement, comment or decision made at a Council or Committee meeting regarding any application for an approval, consent or licence, including a resolution of approval, is not effective as an approval of any application and must not be relied upon as such.

Any person or entity that has an application before the Shire must obtain, and should only rely on, written notice of the Shire's decision and any conditions attaching to the decision, and cannot treat as an approval anything said or done at a Council or Committee meeting.

Any advice provided by an employee of the Shire on the operation of a written law, or the performance of a function by the Shire, is provided in the capacity of an employee, and to the best of that person's knowledge and ability. It does not constitute, and should not be relied upon, as a legal advice or representation by the Shire. Any advice on a matter of law, or anything sought to be relied upon as a representation by the Shire should be sought in writing and should make clear the purpose of the request."

**SHIRE OF DARDANUP****MINUTES FOR THE SHIRE OF DARDANUP LOCAL EMERGENCY MANAGEMENT COMMITTEE MEETING HELD ON WEDNESDAY 11 MAY 2022, AT SHIRE OF DARDANUP – EATON ADMINISTRATION CENTRE, COMMENCING AT 10.00AM.****1 DECLARATION OF OPENING/ANNOUNCEMENTS OF VISITORS**

The Chairperson, Cr. M T Bennett declared the meeting open at 10.00am, welcomed those in attendance and referred to the Disclaimer, Acknowledgement of Country, Emergency Procedure and the Affirmation of Civic Duty and Responsibility on behalf of Councillors and Officers:

*Acknowledgement of Country*

*The Shire of Dardanup wishes to acknowledge that this meeting is being held on the traditional lands of the Noongar people. In doing this, we recognise and respect their continuing culture and the contribution they make to the life of this region and pay our respects to their elders, past, present and emerging. The Shire of Dardanup also respects and celebrates all cultures of all our residents and visitors to our Shire.*

*Affirmation of Civic Duty and Responsibility*

*Councillors and Officers of the Shire of Dardanup collectively declare that we will duly, faithfully, honestly and with integrity fulfil the duties of our respective office and positions for all the people in the district according to the best of our judgement and ability. We will observe the Shire's Code of Conduct and Standing Orders to ensure efficient, effective and orderly decision making within this forum.*

*Committee members acknowledge that only the Chief Executive Officer or a member of the Shire of Dardanup staff appointed by the Chief Executive Officer is to have contact with consultants and suppliers that are appointed under contract to undertake the development and implementation of projects.*

*The exception to this Policy is when there is a meeting of the committee or working group with the consultant and the Chief Executive Officer or the Chief Executive Officer's representative is present.*

*Members of committees acknowledge that a breach of this Policy may result in a request to Council to have them removed from the committee.*

*Emergency Procedure*

*In the event of an emergency, please follow the instructions of the Chairperson who will direct you to the safest exit route. Once outside, please proceed to the muster point located at the front of the building where we will meet (and complete a roll call).*

<b>2 RECORD OF ATTENDANCE/APOLOGIES</b>
---

### 2.1 Attendance

Cr Michael Bennett	-	Shire President (Chairperson) – <i>In Person</i>
Sgt Mike Bickford	-	WA Police (Australind) (Deputy Chairperson) – <i>Teams</i>
Sgt Chris Page	-	WA Police (Capel) – <i>In Person</i>
Mr André Schönfeldt	-	Chief Executive Officer - <i>Teams</i>
Cr Ellen Lilly	-	Elected Member – <i>Teams</i>
Mrs Erin Hutchins	-	Coordinator – Emergency & Ranger Services – <i>In person</i>
Mr John Carter	-	Department Fire & Emergency Services – <i>Teams</i>
Ms Michele Duxbury	-	Department of Communities - <i>Teams</i>
Mr Cam Van Veen	-	Water Corporation – <i>Teams</i>
Ms Julie Pelliciarì	-	Moore Road Emergency Response Group – <i>Teams</i>
Mr Reuben Jacobs	-	Department Parks & Wildlife – <i>Teams</i>
Mr Ron Jeakes	-	Aqwest - <i>Teams</i>
Mr Bruce Hancock	-	Main Roads - <i>Teams</i>

#### Guests - Presentation

Mr Brad Farrant	-	Account Executive (Connectiv)
Ms Danielle Devellerez	-	Telstra – IoT Solutions Specialist Telstra Enterprise
Mr Cameron McKenna	-	Attentis

### 2.2 Observer

Mrs Susan Oosthuizen	-	Director Sustainable Development – <i>In Person</i>
Mrs Kathleen Hoult	-	Governance Officer – <i>In Person</i>
Mr Gary Thompson	-	Manager Sport and Recreation - <i>Teams</i>
Mr Murray Connell	-	Manager Development Services – <i>In Person</i>
Mr Neil Nicholson	-	Principal Environmental Health Officer – <i>In Person</i>
Mr Clint Read	-	Connectiv - <i>Teams</i>

### 2.3 Apologies

Cr Patricia Perks	-	Elected Member
Ms Melissa Howard	-	Emergency Management Officer
Ms Melanie Ring	-	Place and Community Engagement Officer
Mr Vik Cheema	-	SW Office of Emergency Management
Sgt Luke Fowler	-	WA Police Australind (Deputy Chairperson)
Mr Tim Stevens	-	Dept of Primary Industries and Regional Development
Mr Paul Sanderson	-	Eaton Lions Club

## 3 PRESENTATIONS

### 3.1 Internet-of-Things (IoT) and Interactive Emergency Networks

A presentation by Mr Brad Farrant, Account Executive, Connectiv was provided on IoT and Interactive Emergency Networks.

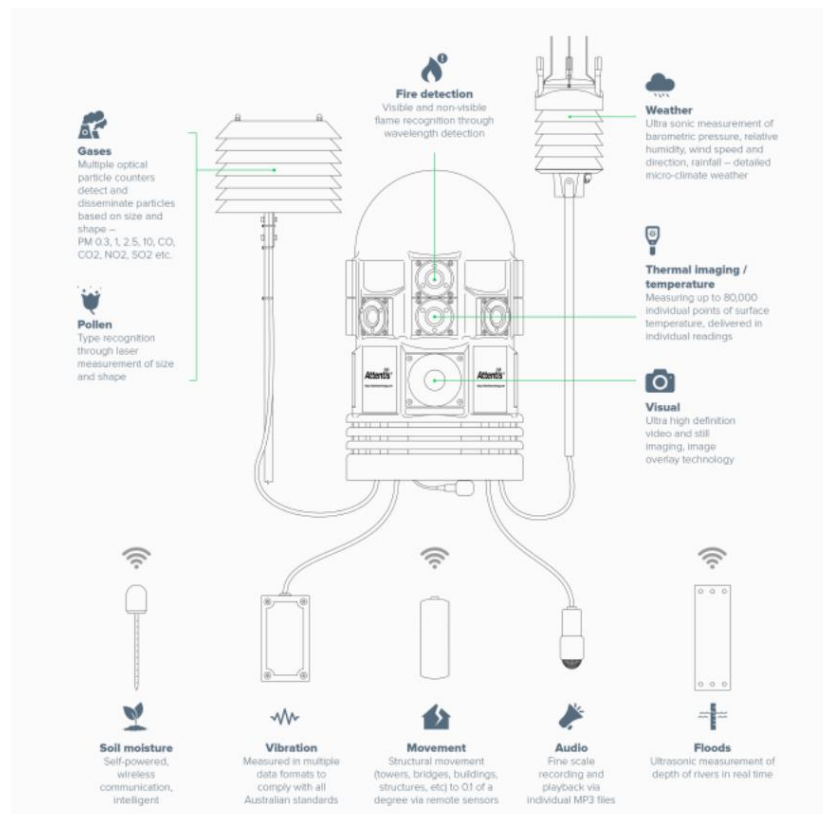
Mr Brad Farrant and Ms Danielle Devellerez provided an overview of the services they can provide in conjunction with AI and advanced technology from Attentis.

The technology combines Telstra and Attentis technology with Connectiv implementation management in an intelligent network that will monitor, measure and highlight the effects of climate change, incorporating fire ignition, flood monitoring and prediction, air quality, soil and environmental health services such as electricity infrastructure or road network to provide a clear, concise picture of a local environment and crucial during emergencies and how we respond.

Our multi-sensors technology are equipped with AI analytics so that we, for the first time, can identify conditions and environmental factors and respond immediately, while continuing to measure and monitor live environmental conditions to aid situational awareness in the event of emergencies.

This technology supports real-world resilience and response to climate change, providing the tools for emergency services, industries and communities to make better, faster, and more informed decisions that protect citizens, property and natural resources.

Mr Cameron McKenna provided a demo of the Intelligent Sensors, by demonstrating the various features and dashboard information that can be captured by this unit. Information on the Attentis – Intelligent Sensors, can be found on their website: [Attentis® - Intelligent Sensors - Attentis® \(attentistechnology.com\)](https://www.attentistechnology.com) and in the supporting documentation, accompanied with these minutes [LEMC Additional Information: 3.1A]





*Discussion:*

*Some questions were raised at the conclusion of the presentation:*

*Q: What Elevation does it sit at and can it view through forest canopy?*

*A: The fixed poles are 8.5m. The unit cannot look through a canopy. With Forestry it is put on the outsides of the plantations with thermal imaging picking up the approach of a fire.*

*Q: What distance can it see to?*

*A: Visual and Thermal up to 1km*

*Q: Have you had discussion with the relevant WA government and federal agencies?*

*A: Attentis has had communications at a Federal level, however no presence in Western Australia at the moment. They are currently operating in Victoria, New Zealand, California, South Australia and Tasmania.*

*Q: How many would be required for the Shire of Dardanup?*

*A: Area of 520 sq km, 26 units would be required to cover the Shire of Dardanup area. This has already been mapped out and scoped with features of air quality, weather, soil moisture, vibration, fire etc.*

*Q: Have you placed this technology on landfill sites or other high risk industrial sites?*

*A: Yes. This technology has already been used in a variety of refuse sites and other high risk areas including plantations, coal mines, land fill etc. Example is the LaTrobe Valley which currently monitors for fire ignition and pollution levels.*

*Q: Can they be moved easily?*

*A: Yes. There are fixed units and mobile units available.*

*Q: From emergency services perspective with DFES and DPAW already having existing software and systems for emergency management in place these organisations would need to be able to integrate all systems. Is this system able to be applied to aircraft?*

*A: Yes. These units are able to be applied to aircraft, however these have not been mounted to any aircraft at the moment. The company is currently in negotiations with a satellite company (confidential) to look at opportunities in this area.*

*Note: Sgt Mike Bickford has requested that further information be sent on the abilities and advantages that this would be able to provide law enforcement especially with the case of the missing persons or information into incidents and investigations. Mr Cam McKenna advised that they are already engaged with VicPol and it is being used in the community with the integration of AI technology they are able to capture persons, car number plates etc., all live.*

Presentation concluded at 10:45am and presenters Mr Brad Farrant, Ms Danielle Devellerez and Mr Cameron McKenna left the room.

**4 CONFIRMATION OF MINUTES/NOTES OF PREVIOUS MEETING**

4.1 Title: Local Emergency Management Committee Meeting Held 9 February 2022 – UPDATED

*Note: Due to a lack of quorum at the Local Emergency Committee Meeting of 9 February 2022, there was no official meeting minutes taken. The informal 'Notes' were distributed to the LEMC via email on 17 February 2022 and can be found on the Shire of Dardanup website for review at [Local Emergency Management Committee : Shire of Dardanup](#).*

RECEIVED

4.2 Title: Local Emergency Management Committee Meeting Held 10 November 2021

*Note: Due to a lack of quorum at the Local Emergency Committee Meeting of 9 February 2022, the minutes of the meeting prior to that one, held on 10 November 2021, were not confirmed by the Local Emergency Management Committee. The minutes and notes from previous meetings are available on the Shire of Dardanup website for review at [Local Emergency Management Committee : Shire of Dardanup](#).*

**OFFICER RECOMMENDED RESOLUTION  
& LOCAL EMERGENCY MANAGEMENT COMMITTEE RESOLUTION**

LEM 01-22      MOVED -      Mrs E Hutchins      SECONDED -      Sgt C Page

**THAT the Minutes of the Local Emergency Management Committee Meeting held on 10 November 2021, be confirmed as true and correct subject to no / the following corrections:**

CARRIED

**5 ANNOUNCEMENTS OF MATTERS FOR WHICH MEETING MAY BE CLOSED**

None.

**6 QUESTIONS BY MEMBERS OF WHICH DUE NOTICE HAS BEEN GIVEN**

None.

**7 DECLARATION OF INTEREST**

None.

## 8 REPORTS OF OFFICERS

### 8.1 Title: Update Report from Shire of Dardanup

*Reporting Department:* Sustainable Development  
*Reporting Officer:* Mrs Erin Hutchins - Coordinator Emergency & Ranger Services  
*Legislation:* Local Government Act 1995  
 Emergency Management Act 2005

#### 8.1.1. Acronyms & Terms

There have been no amendments or additions to the emergency management list of acronyms or terms.

#### 8.1.2. Confirmation of LEMA Contact Details and Key Stakeholders

A copy of the Shire of Dardanup LEMA contact and resource directory available electronically. Please note that this document is confidential and should not be circulated outside of the LEMC.

It is requested that any required changes to contact and key stakeholders details are notified as soon as possible to the Shire of Dardanup via [emergency@dardanup.wa.gov.au](mailto:emergency@dardanup.wa.gov.au) to allow updates to be made.

#### 8.1.3. Committee Membership & Resources

There are no new membership requests at this time.

#### 8.1.4. Status of Local Emergency Management Arrangements (LEMA)

The Shire of Dardanup Local Emergency Management Arrangements (LEMA) and Local Recovery Support Plan (LRSP) were endorsed at the December 2021 OCM [412-21].

8.1.5. Exercises that Tested the LEMA - Nil to report.

8.1.6. Sub-Committees or Working Groups - Nil to report.

8.1.7. Projects Undertaken - Nil to report.

8.1.8. Key Achievements - Nil to report.

8.1.9. Local Training Needs or Opportunities - Nil to report.

#### 8.1.10. Funding Opportunities

- The State Emergency Management Committee (SEMC) have announced current funding opportunities available;

- All West Australians Reducing Emergencies (AWARE) grant program. Total funding available is \$200,000 and is now open and closes on the 10 June 2022. Projects delivered under the AWARE program will support local government projects that fall into one or more of the following categories:
  - o Furthering the emergency risk management process;
  - o Facilitating capability-based exercises;
  - o Assisting in reviewing Local Emergency Management Arrangements (LEMA);
  - o Delivering emergency management training; and
  - o Hosting or facilitating emergency management events or forums.
- National Disaster Risk Reduction (NDRR) grant program that will enable natural disaster risk reduction projects and initiatives. The total funding available is \$4.8 million dollars. The NDRR grant application is now open and closes on 5 May 2022.
- The Shire of Dardanup has made an application to Round 2 of the Australian 5G Innovation Initiative to assist with the delivery of the Dardanup Emergency Information Network (DEIN) project. The project could see a continuous high speed information network, established through the installation of a range of intelligent Attentis sensors, supported by 5G technology, across the Shire of Dardanup footprint.

The multi-sensors featured in the network provide early fire ignition and flood warning, weather, air quality, rainfall, temperature, barometric pressure, humidity and wind as well as thermal and visual imaging supporting machine learning capabilities to identify future areas of significant risk to fire ignition.

8.1.11. Incident Support Group Activations/ Incidents - Nil to report.

8.1.12. Emergency Risk Management Processes/Treatment Strategies - Nil to report.

8.1.13. Post Incident / Exercise Reports - Nil to report.

8.1.14. Completion of Annual and Preparedness Report Capability Survey

In March 2022, the Shire received their 2021 Emergency Management Capability Summary Report from the State Emergency Management Committee (SEMC) Chair.

The report was prepared by the Department of Fire and Emergency Services (DFES) State Capability Team, on behalf of the SEMC. It is based on the Shire's responses to the 2019 and 2021 state emergency management capability survey, focusing on areas of highest capability and the aspects that may require more attention.

The summary can be used for a variety of purposes, such as:

- Facilitating and guiding emergency management planning;
- Informing Local Emergency Management Arrangements (LEMA);
- Informing Local Emergency Management Committee (LEMC) business plans and activities;
- Informing EM exercising in line with the State Exercise Framework requirements;
- Supporting review and refinement of broader business continuity plans;
- Supporting business cases; and
- Highlighting areas of success.

The Shire has reviewed the report where it highlighted an opportunity to increase our emergency management capabilities in relation to opening up Dardanup local emergency welfare centres in the absence or delay of the Department of Communities as well as providing ongoing support.

The Shire is making application to the AWARE grant program to enable the Shire to create and promote internal emergency support arrangements and processes for opening up Dardanup local emergency welfare centre(s).

The proposed Local Emergency Welfare Support Plan (LEWSP) will guide internal preparedness by enhancing capacity, capability, knowledge and understanding of Local Government officers' responsibilities for opening an emergency welfare centre for an impacted community.

By undertaking this project that incorporates the development of the LEWSP and a functional exercise with Shire of Dardanup staff, it is anticipated the following benefits will be achieved, including;

- Support for the Local Emergency Management Arrangements and Department of Communities Local Emergency Welfare Plan in the coordination of opening an emergency welfare centre(s).
- Define roles and responsibilities for Shire staff in the coordination of opening an emergency welfare centre(s) for impacted residents.
- Provide useable tools and templates to assist in the management of impacted persons presenting at a Welfare Centre(s) in an emergency.
- Increased staff understanding of Local Governments role and responsibilities in opening a Welfare Centre(s) for evacuating community members in an emergency.

The Shire is currently completing the 2022 Annual and Preparedness Report Capability Survey and will be submitted **no later than Wednesday 15 June 2022**.

#### 8.1.15. Local Emergency Management Committee Business Plan

The State Emergency Management Committee (SEMC) endorsed a new business plan template, to assist local governments with the administration of LEMC, at their December 2021 meeting.

Attached is the Shire of Dardanup Local Emergency Management Committee Business Plan 2022-2023 for endorsement (APPENDIX LEMC: 8.1A).

### **OFFICER RECOMMENDED RESOLUTION & LOCAL EMERGENCY MANAGEMENT COMMITTEE RESOLUTION**

LEM 02-22      MOVED -      Cr M T Bennett      SECONDED -      Sgt C Page

**THAT the Local Emergency Management Committee endorse the Local Emergency Management Committee Business Plan 2022-2023 provided in Appendix LEMC: 8.1A.**

CARRIED

#### 8.1.16. Seasonal review – fire season preparedness

Refer DFES representative report if applicable.

#### 8.1.17. Seasonal review – storm season preparedness

Refer DFES representative report if applicable.

### 8.1.18. Other Business

After a recent review of the 'All Hazards Evacuation Flagging Guideline' and State EM Plan section 5.3.2 was completed by the DFES State EM Policy Branch, the SEMC Policy and Legislation branch are now seeking feedback on the proposal to remove the 'All Hazards Evacuation Flagging Guideline' and evacuation flagging section within the State EM Plan. Feedback will help identify and address any concerns before requesting endorsement and approval from the SEMC Response and Capability subcommittee and SEMC.

LEMC members wishing to take up the opportunity, please refer to the **Consultation Information** below for information about the consultation process as well as instructions on how to submit feedback:

#### ***Consultation Information***

##### ***All Hazards Evacuation Flagging Guideline***

*The DFES State EM Policy Branch is conducting consultation via Social Pinpoint.*

*You can view all current consultations on the [State Emergency Management Policy Branch Consultation Homepage](https://dfes.mysocialpinpoint.com.au/all-hazard-evacuation-flagging-guidelines-review/), including the All Hazards Evacuation Flagging Guideline:*

*On this page you will be able to:*

- *View information about the consultation process.*
- *Download and view the proposed amendments to the State EM Plan and current guidelines.*
- *Submit your feedback.*

***Please submit your feedback by COB Tuesday 24 May 2022.***

*As the SEMC continue to trial Social Pinpoint, they would also appreciate your feedback on this platform. You can share your thoughts and experiences in the 'Feedback on the use of Social Pinpoint' at the bottom of the page.*

*If you experience any difficulties with accessing Social Pinpoint or have any other questions, please contact [SEMC.policylegislation@dfes.wa.gov.au](mailto:SEMC.policylegislation@dfes.wa.gov.au)*

## 8.2 Title: Agency Reports – Various

<i>Reporting Department:</i>	<i>Various</i>
<i>Reporting Officer:</i>	<i>Various</i>
<i>Legislation:</i>	<i>Local Government Act 1995</i> <i>Emergency Management Act 2005</i>

(In the interest of time efficiency report to be accepted as presented, not read aloud at the meeting)

### Background

Each agency is invited to provide the meeting with a report of their activities for the benefit of the committee.

#### ◇ **Office of Emergency Management – Vik Cheema**

##### ***State***

**State Emergency Management Committee** met on 11 March 2022 and a copy of the SEMC Communique is provided for your information (APPENDIX LEMC 8.2A).

##### ***Funding***

The State Emergency Management Committee has recently endorsed the following funding opportunities and applications are now open

1. All West Australians Reducing Emergencies (AWARE) grant program. Total funding available is \$200,000. Grant opens on 29 April 2022 and closes on 10 June 2022. I would highly encourage all local governments due for the 5 yearly LEMA review in 2022 to apply for the funding if required. Funding could support your internal staff to undertake the review process or if you choose to engage the external contractor.
2. National Disaster Risk Reduction (NDRR) grant program. The total funding available in this round is \$4.8 million dollars. The NDRR grant application is open now and closes on 5 May 2022.

In addition to the two funding opportunities above, the SEMC is providing support to the National Recovery and Resilience Agency in administering the Coastal and Estuarine Risk Mitigation Program 2022/23. This Commonwealth-funded grant seeks to address coastal hazards, such as inundation, storm surge and erosion. I believe WALGA has written to local governments interested in applying EOI for this funding.

To access all funding opportunities, criteria and application process currently available, please check out the link at <https://semc.wa.gov.au/funding>

##### ***District – South West***

**COVID-19:** Department of Health (HMA) facilitates regular Operations Area Support Group (OASG) meetings. Additional OASG meetings are held to share time-critical information with the emergency management stakeholders and local government representatives.

**SW DEMC:** meeting (via MS TEAMS) held on 22 March 2022.

## Local

**Annual and Preparedness Report Capability Survey:** Local Emergency Management Committees are required to submit annual reports to the SEMC regarding their emergency management activities. A letter requesting the 2021-2022 annual preparedness report capability survey will be sent to the local governments over the coming weeks. Survey will open 18 April and close on 15 June 2022.

A status of the Local Emergency Management Arrangements is provided below. Please check the due date for the five-yearly LEMA reviews and allow a minimum of six months to complete the LEMA review process.



**South West**  
District Emergency Management Committee  
Local EM report as at 28 February 2022

Number local governments	Number LEMCs	LEMA noted/submitted to SEMC	% Local governments with current required LEMA		
12	12	12	100%		
Local Government		LEMA Status	Date	Resolution No	Date of 5 year review
Shire of Augusta Margaret River	Augusta Margaret River	Annual review required	3/10/2017	46/2017	3/10/2022
Shire of Boyup Brook	Boyup Brook	Current	3/08/2018	52/2018	3/08/2023
Shire of Bridgetown-Greenbushes	Bridgetown-Greenbushes	Annual review required	3/10/2017	46/2017	3/10/2022
City of Bunbury	Bunbury	Current	6/03/2020	08/2020	6/03/2025
City of Busseton	Busseton	Annual review required	8/12/2017	63/2017	8/12/2022
Shire of Capel	Capel	Draft to tabled at LEMC	2/08/2016	40/2016	2/08/2021
Shire of Collie	Collie	Annual review required	3/10/2017	46/2017	3/10/2022
Shire of Dardanup	Dardanup	Draft tabled at SW DEMC	2/08/2016	40/2016	2/08/2021
Shire of Donnybrook-Balingup	Donnybrook-Balingup	Annual review required	3/10/2017	46/2017	3/10/2022
Shire of Harvey	Harvey	Annual review required	3/10/2017	46/2017	3/10/2022
Shire of Manjimup	Manjimup	Current	6/03/2020	08/2020	6/03/2025
Shire of Nannup	Nannup	Current	14/08/2020	50/2020	14/08/2025



◇ **Department of Communities – Michele Duxbury**

<b>Agency:</b>				
<b>Department of Communities (Communities)</b>				
<b>Date: From – Apr 2022 to June 2022 inclusive</b>				
<b>INCIDENTS:</b>				
<b>Date</b>	<b>Type of Incident</b>	<b>Location of Incident</b>	<b>Other Agencies Involved</b>	<b>Comments/Outcomes</b>
Continual	Health – Pandemic	South West	HMA – Health	
<b>EXERCISES AND TRAINING:</b>				
<b>Date:</b>	<b>Title</b>	<b>Objectives</b>	<b>Comments/Outcomes</b>	
<b>Additional Comments/Suggestions:</b>				
<ul style="list-style-type: none"> <li>• Since the Bridgetown/Hester Area Bushfire has been declared an event, Communities has been contacting residents affected and providing recovery to those who can apply for <i>Disaster Recovery Funding Arrangements – Category 3</i>.</li> <li>• Welfare Plans have been updated and are ready for tabling at the LEMC meetings.</li> <li>• COVID: Communities has been working diligently in providing certain cohorts with accommodation and provisions over the last couple of months.</li> </ul>				

The *Local Emergency Welfare Plan – Bunbury Region* has been provided for your review (APPENDIX LEMC 8.2B).

The Department of Communities have been deployed to NSW to assist with recovery after the recent floods. Staff currently deployed will return in 1 ½ weeks. Michele will be deployed on their return.

Michele is interested in the attending upcoming exercises.

◇ **Department of Fire & Emergency Services – John Carter (District Officer Emergency Management)**

***High Threat Bushfire Season 2021/22***

The 2021/22 high-threat period for the bushfire season was extended to the 28th April 2022 due to the underlying dry conditions in the South West of WA. While many local governments have opened their restricted burning season, we urge all landowners to proceed with caution during this period.

There were approximately 23 lightning caused fires on and around the 13th March 2022 across a number of Shires and land tenures. Most quickly contained, with a few requiring ongoing management due to inaccessibility and heavy fuels.

Thank-you to all the agencies and volunteers who have assisted during these incidents including Bush Fire Brigade, Volunteer Fire and Emergency Service, Volunteer Fire and Rescue Service who have worked incredibly hard in very tough conditions, motivated by a common desire to protect the homes and lives of Western Australian people.

An important message in all the incidents over this summer has been the value of having local knowledge imbedded within the Incident Management Team. This local knowledge permits the IMT to gather important local information to assist in combatting the incident and provides a gateway of getting information back into the community.

**Autumn Prescribed Burning Season**

The Autumn prescribed burning season is amongst us and DBCA, DFES, LGs and private property owners are taking advantage of the recent rains and milder weather conditions.

**COVID-19**

The State Government will ease its COVID-19 public health and safety measures from a Level 1 status to baseline settings. Some of the new measures will impact DFES staff and volunteers undertaking their duties.

**Masks**

Under the OSH Act, DFES, as an employer, has the responsibility to provide a safe workplace and therefore staff and volunteers are encouraged to continue to wear Face Masks, especially where physical distancing isn't possible. If you feel at risk, you are encouraged to wear a Face Mask.

**Close contacts**

WA will fall into line with other States by removing the requirement for a Close Contact of a positive COVID-19 case to isolate for seven (7) days.

Under the new measures, Close Contacts with no symptoms must:

- Undertake a daily Rapid Antigen Test (RAT);
- Work from home, where possible and in consultation with your line manager;
- Wear a mask when leaving the house;
- Avoid high-risk settings, including hospitals, healthcare settings, disability and aged care facilities, and correctional facilities; and
- Avoid non-essential gatherings and contact with people at risk of severe illness.

Close contacts must still report their details to the DFES COVID-19 Call Centre – 1800 161 136 as soon as possible to assist with the management of staff and volunteers and ensure the continuation of emergency services.

**Proof of COVID-19 vaccinations**

Mandatory workplace vaccination requirements remain in place.

**Reporting COVID-19 details**

Staff and volunteers are still required to register their positive PCR test or RAT results and Close Contact status with the DFES COVID-19 Call centre on 1800 161 136. If you are unwell do not attend work or your Brigade, Group or Unit (BGU).

**Work Health and Safety Act 2020**

The Work Health and Safety Act, 2020 (WHS Act) which took effect on 31 March 2022 provides a framework to protect the health, safety, and welfare of workers in Western Australian workplaces, and of other people who might be affected by the work. The new WHS Act retains the principle that workers (inclusive of volunteers) and other persons should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work as is reasonably practicable.

**WA Fire and Emergency Services Conference 2022**

I am pleased to announce the 11th annual WA Fire and Emergency Services (WAFES) Conference will be held on Friday 9 and Saturday 10 September 2022 at Crown Perth. The WAFES Awards gala dinner will again round out the program on Saturday evening.

**Australian Fire Danger Rating System (AFDRS)**

The new AFDRS is launching on 1 September 2022. It will:

- Incorporate new science;
- Accurately reflect more fuel types;
- Better predict fire danger conditions;
- Simplify and improve public information about fire danger; and
- Support strategic planning, operations and risk mitigation.

To leverage the community's familiarity with the current fire danger signage, the new ratings framework has been simplified to four levels. There will be clear messages and distinct actions at each level.

People are encouraged to sign-up to receive regular email updates from the DFES AFDRS project team (see attached circular). The updates will provide the latest information about the system, signage, training, legislation and policy changes, public information, communication and education products and more.

**Climate Outlook**

BOM have released their latest climate outlook for May to July 2022 (issued 28th April) which is available at <http://www.bom.gov.au/climate/outlooks/#/overview/summary>.

- May to July rainfall is likely to be above median for most of Australia, except south- Western Australia and western Tasmania which have roughly equal chances of being above or below median.
- May to July maximum temperatures are likely to be above median for northern, and far south-western and south-eastern parts of Australia, but below median for broad areas of inland southern and central Australia.
- Minimum temperatures for May to July are very likely to be warmer than median across almost all of Australia.
- The weakening La Niña, the chance of a negative Indian Ocean Dipole, and other localised drivers are likely to be influencing this outlook.

**New Burning Grass Trees Information Sheet**

The DFES Bushfire Technical Services Team has released a new 'Burning Grass Trees' information sheet to help build a greater understanding of how to manage the bushfire hazard and wildlife habitat values of grass trees in a safe and ecologically sustainable manner. Bushfire practitioners, land managers, private landholders and other interested parties are encouraged to review the information sheet to support a consistent and ecologically sensitive approach to grass tree burning.

DFES General Circular No: 53/2022 has been provided for your information (APPENDIX LEMC 8.2C).

**Discussion:**

DFES have advised that there will be a Regional Flood exercise planned for July this year and would very much like the Shire of Dardanup and other surrounding government agencies involved in the ISG and/or OASG, to participate in the exercise. Further information will be sent through to Erin Hutchins once details are confirmed for distribution.

A DFES Safety Circular on the Potential Exposure to Chromated Copper Arsenate (CCA) are provided with these minutes [LEMC Additional Information: 3.1B] based on the recent events at the Bridgetown Bushfire.

◇ **Department of Primary Industries and Regional Development – Tim Stevens (Operations Manager – Incident & Emergency Management Branch)**

***Situation Report:***

1. Declared incidents – DPIRD is managing:
  - 6 plant pest Level 2 Incidents.
  - 3 animal pest/disease Level 2 Incidents
    - This includes assisting the National response to Japanese Encephalitis (JE).
2. Alerts and investigations – DPIRD currently investigating a further six pests and diseases.
3. DPIRD continues to monitor reported outbreaks of African Swine Fever – Republic of Korea, China, Malaysia, Indonesia.
4. Severe Tropical Cyclone Seroja (Recovery) – DPIRD’s Rural Business Develop Unit are administering reimbursement grants (Commonwealth funding) and available to help growers through the process.
5. COVID 19 – DPIRD continues to support COVID response activities as per DoH advice. This includes maintaining awareness of the virus with staff, facilitating proof of vaccination requirements and adhering to the latest DoH requirements. (including wearing of masks & updated advice on close contacts)
6. Preparedness for 2021/22 High Risk Weather Season – DPIRD has completed a series of Natural Hazards & Biosecurity Preparedness workshops including a discussion exercise with DPIRD first response teams across the State. Kununurra and Broome staff undertook a “Cyclone” exercise. Bunbury, Northam, Geraldton, Esperance, Albany & Perth metro workshops were based on a “Fire” event discussion exercise.
7. DPIRD has and continues to support HMA’s in regard to Animal Welfare in Emergencies for a number of Fires over the summer months with the State Support Plan – Animal Welfare in Emergencies (SSP – AWiE) activated twice in recent weeks for the Bayview Rise (Denmark) and Narrogin East Fire responses.

***Incident and Emergency Management:***

The **Department of Primary Industries and Regional Development** (DPIRD) plays a crucial role in emergency management to safeguard Western Australia’s primary industries and regions, and support their growth by preventing and minimizing the impact of incidents.

DPIRD’s role is as the Hazard Management Agency (HMA) for animal and plant biosecurity, as well as managing risk in other areas in relation to animal welfare, marine and fish pest incidents. The department also has responsibility for providing support services to other Hazard Management Agencies. This includes:

- Coordinating responses to animal welfare during natural disasters and severe weather events such as cyclones or bushfires;
- Assisting with fish pest events;
- Rapid assessment of natural disaster impacts on primary industries where the affected sector specific skills, experience or expertise resides within the department; and
- Assisting, within DPIRD's capabilities and portfolio, affected primary industries and regions to recover from the consequences of an emergency.

◇ **WA Police**

No further updates or information from Capel or Australind Police

◇ **Moore Road Emergency Response Group**

The Moore Road Emergency Response group, alongside DFES, have been actively carrying out evacuation drills in their area to assist with emergency management planning. The last drill was conducted in March 2022. The next evacuation drill will be carried out onsite on 25<sup>th</sup> May 2022.

The Emergency Response group would be interested in participating in the Regional Flood Exercise, organised by DFES later on in the year.

**9 MATTERS BEHIND CLOSED DOORS**

**10 CLOSURE OF MEETING**

The Chairperson advises that the date of the next Local Emergency Management Committee Meeting will be Wednesday 10 August 2022 commencing at 10.00am at the Shire of Dardanup - Administration Centre Eaton.

There being no further business the Chairperson declared the meeting closed at 11:02am.



Shire of Dardanup

**ADDITONAL  
INFORMATION  
LOCAL EMERGENCY  
MANAGEMENT COMMITTEE  
MEETING**

Held on

**Wednesday, 11 May 2022**

At

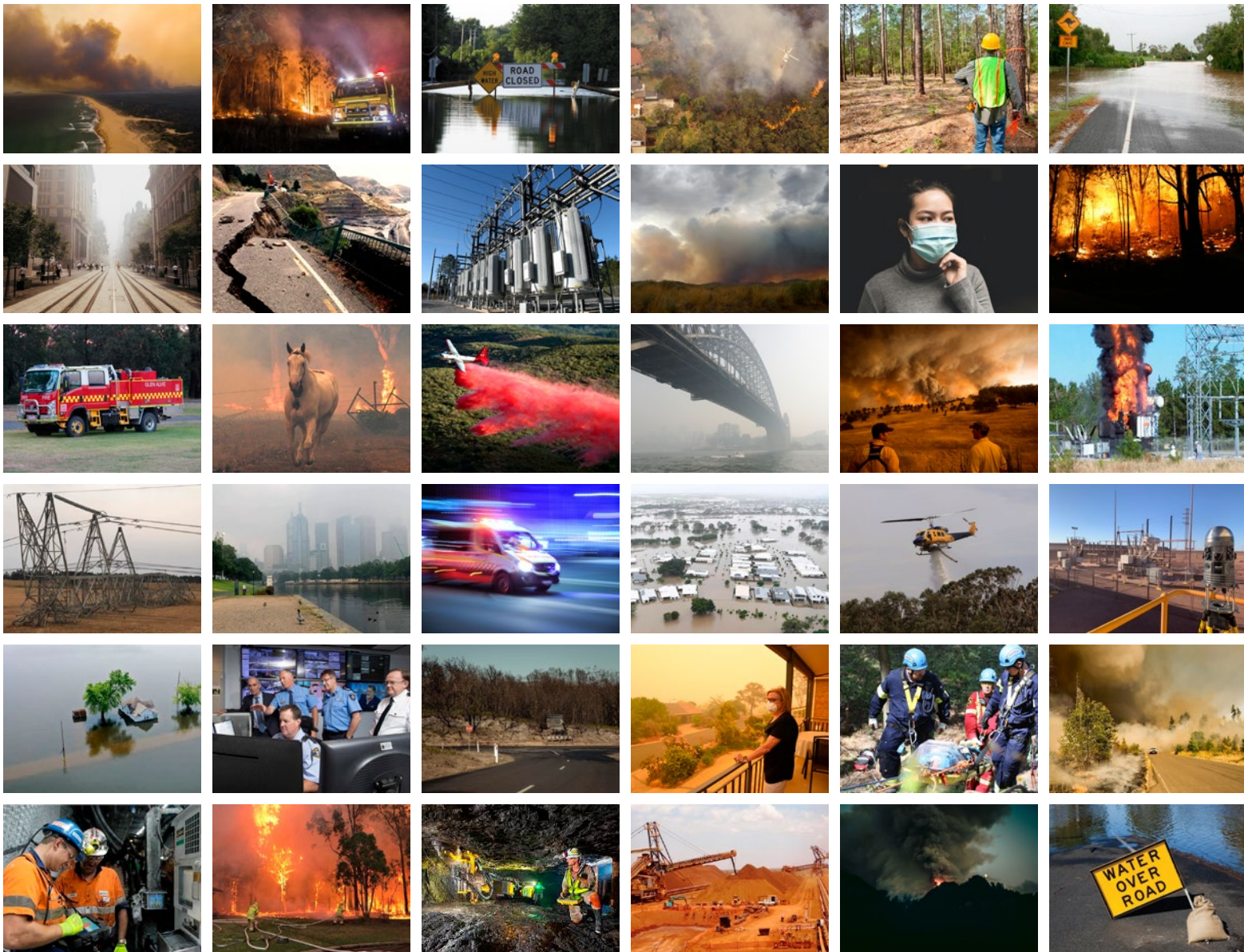
**Shire of Dardanup  
Administration Centre Eaton**



This document is available in alternative formats such as:  
~ Large Print  
~ Electronic Format [disk or emailed]  
Upon request.

# [LEMC Additional Information: 3.1A]

Attentis®



## INTELLIGENT NETWORKS

Incorporating real-time fire ignition and flood detection, live air quality, micro-climate weather, soil moisture, ground movement, remote visibility, security and safety, in a single integrated, intelligent network.

© 2022

### STRICTLY COMMERCIAL IN CONFIDENCE

The enclosed content are the property of Attentis® Pty Ltd and cannot be replicated or disclosed to a third party without the express written approval of Attentis® Pty Ltd.



# Attentis® is an Australian company that pioneered real-time integrated intelligent sensor networks, globally.

and composition, 360° thermal and visual cameras, artificial intelligence and active machine learning are incorporated to provide a complete understanding of the local environment.

The ultra-rich data captured from our multi-sensors travels seamlessly through our high-speed wireless, integrated networks, enabling a continuous real-time picture at a location, accessible from anywhere in the world.

Registered users can create individual threshold alerts for a range of key elements including escalating weather conditions, air quality concentration levels and equipment operating temperatures.

Our simple-to-use websites and Apps provide a new level of insight to deliver improved prediction, risk reduction, rapid mitigation and response.

Attentis® began designing and manufacturing intelligent multi-sensors, high speed data networks and interactive interfaces in 2009 to address the need for greater information, insight and understanding to enable rapid, informed and strategic decisions.

Attentis® pioneered real-time situational awareness through its range of intelligent multi-sensors that deliver a continuous stream of environmental and operational measurements to determine fine scale changes that indicate the onset of current or future impact.

Attentis® multi-sensor technology incorporates 24-hour unmanned detection of fire ignition, spark, arcing, water height, airborne pathogens and gases, trespass, equipment stress, future component failure, noise, vibration and ground movement. Live micro-climate weather, air quality



Smart City of the Year 2019 (Regional)



Best Government IoT Project (2019)



Best Overall IoT Project (2019)





**Multi-sensors**

Attentis® manufactures a range of real-time, multi-communication, self powered sensors that combine vast sensing capabilities into a small (30cm x 15cm) compact unit.

Attentis® R Series multi-sensors enable 24-hour remote monitoring, detection and notification of events, changes, impacts, movement, encroachment, ignitions and conditions at a specific location. Continuous measurement of multiple environmental factors provides a clear understanding of the interactions that lead to an event, helping to identify the cause (aiding prediction and prevention) and maintain a record of all factors during an event (report).

The addition of artificial intelligence and active machine learning enables accurate prediction, early detection and improved management.

**Construction**

Attentis® R Series multi-sensors are constructed using a complex composition of fire, shock and UV resistant polymers, incorporating multilayer protection to enable continuous operation in the harshest of environments. Ex series multi-sensors incorporate further features to ensure operation in temperatures of -40°C to 400°C.

**Power supply**

All Attentis® multi-sensors are available with a range of power options including stand alone solar powered units with a built in backup power supply to ensure operation during extended periods without sunlight, rechargeable battery models, mains powered 110V/240V and portable plug pack units.

Attentis® multi-sensors incorporate proprietary multi-communication capabilities, combining licensed radio, unlicensed radio, cellular, satellite and Wi-Fi into a single device to provide redundancy and ensure data delivery.

Individual multi-sensors also receive, store, process and transmit information, operating both autonomously and as an integrated network sending information through other multi-sensors. Multi-sensors are self-aware and will operate autonomously controlling equipment or processes when local communication networks are impacted or no longer available.

**Maintenance**

Attentis® multi-sensors feature a range of key elements to minimise in-field maintenance including proprietary lenses, dual operating systems and a complete internal status check every 30 seconds. Any fault is transmitted to Attentis® administration for remote fault diagnosis. Backup system engagement is autonomous. Software and system upgrades are performed remotely.

**Resilience**

Attentis® uses solid-state and ultrasonic components, eliminating the unacceptable risk of moving parts that can fail as a result of conditions, impact, encroachment or fatigue.

**R Series multi-sensor capabilities**

Detection of flame / spark / arcing / flooding / impacts

Air composition levels of PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub> / CO<sub>2</sub> / CO / SO<sub>2</sub>, NO<sub>2</sub>, smoke, gases, dust

360° temperature measurement, thermal imaging and machine learning to detect future faults

360° visual images, time lapse, video

A.I and Image recognition - encroachment, trespass, vehicles, vehicle types, animals, people

Wind speed, wind direction and gust speed measurement (ultrasonic)

Relative humidity, precipitation, rainfall measurement

Barometric pressure, dew point, fire rating index

Audio monitoring for frequency, voice and sound

Structural, footing, tower and ground movement

Instant notification of threshold breach via email and SMS with live conditions and images





## Intelligent, integrated, intuitive

R Series intelligent patented multi-sensors deliver 24-hour, unmanned, continuous measurement, edge data processing and live streaming of real-time integrated information; providing users a greater understanding of events and impacts as they unfold. Enhanced by artificial intelligence, R Series multi-sensors deliver unparalleled detection, notification, information and the ability to rapidly respond.



No trenching



No cabling



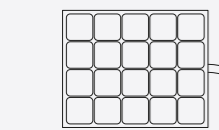
### Gases

Multiple air quality sensors detect and disseminate particles based on size and shape – PM 0.3, 1, 2.5, 10, CO, CO2, NO2, SO2 etc.



### Pollen

Type recognition through laser measurement of size and shape to detect and notify asthma sufferers



### Solar powered

Mains powered and 110V/240V portable plug pack units are also available



### Fire detection

Visible and non-visible flame recognition detection



### Weather

Ultra sonic measurement of barometric pressure, relative humidity, wind speed and direction, rainfall – detailed micro-climate weather World Meteorological Standards approved



### Thermal imaging / temperature

Measuring up to 80,000 individual points of surface temperature, delivered as individual readings



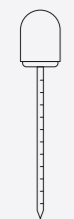
### Visual

Ultra high definition video and still imaging, image overlay technology



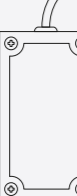
### Compact

15 x 30 cm in size



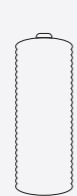
### Soil moisture

Self-powered, wireless communication, intelligent



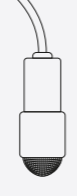
### Vibration

Measured in multiple data formats to comply with all Global standards



### Movement

Ground & Structural movement (towers, bridges, buildings, structures, etc) to 0.1 of a degree via remote sensors



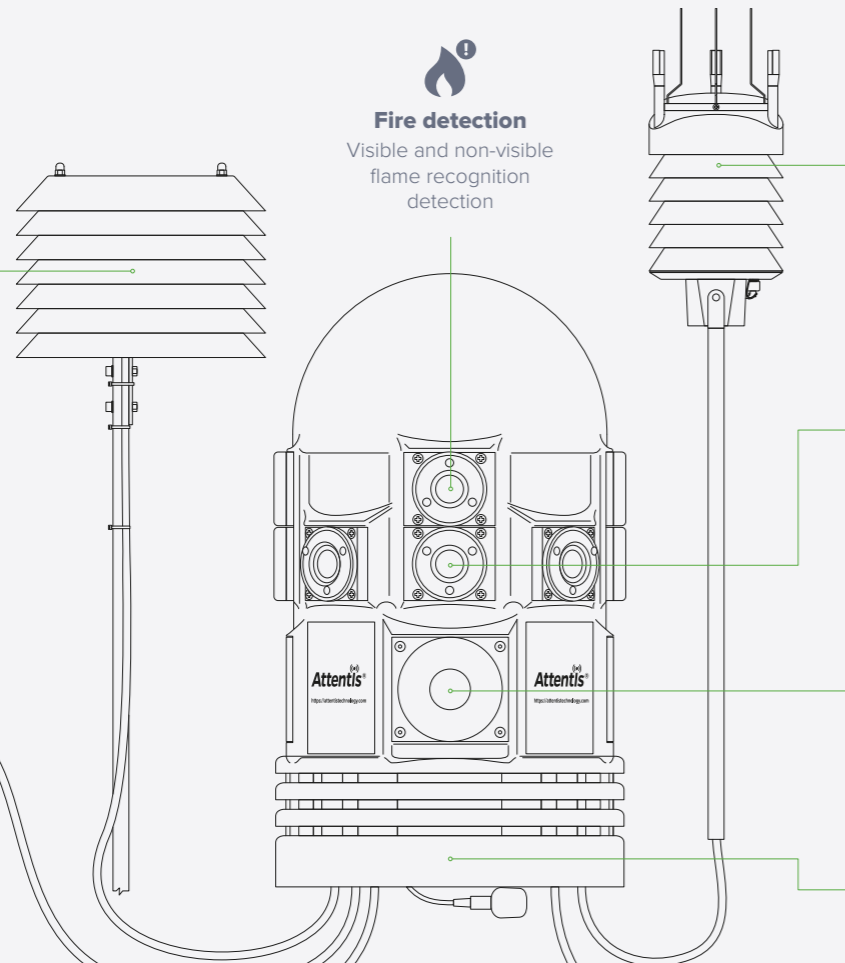
### Audio

Fine scale recording and playback via individual MP3 files



### Floods

Ultrasonic measurement of river depth and height in real time



Stand alone installations are unobtrusive, small footprint and self powered - no cabling or trenching. Available in pole, bracket attachment, skid mounted and portable tripod.



Mobile



Mobile



Mobile



NB-IoT



Satellite



Radio - Licensed / Unlicensed



pLTE



Wi-Fi





# An App for all seasons

## Access to information during any event is a critical element in decision making.

The Attentis® App delivers live, continuously streamed information into the palm of your hand, displaying ever changing local conditions and critical information around air quality, weather, fire locations, flood zones, rainfall and access to images to ensure that users are well informed.

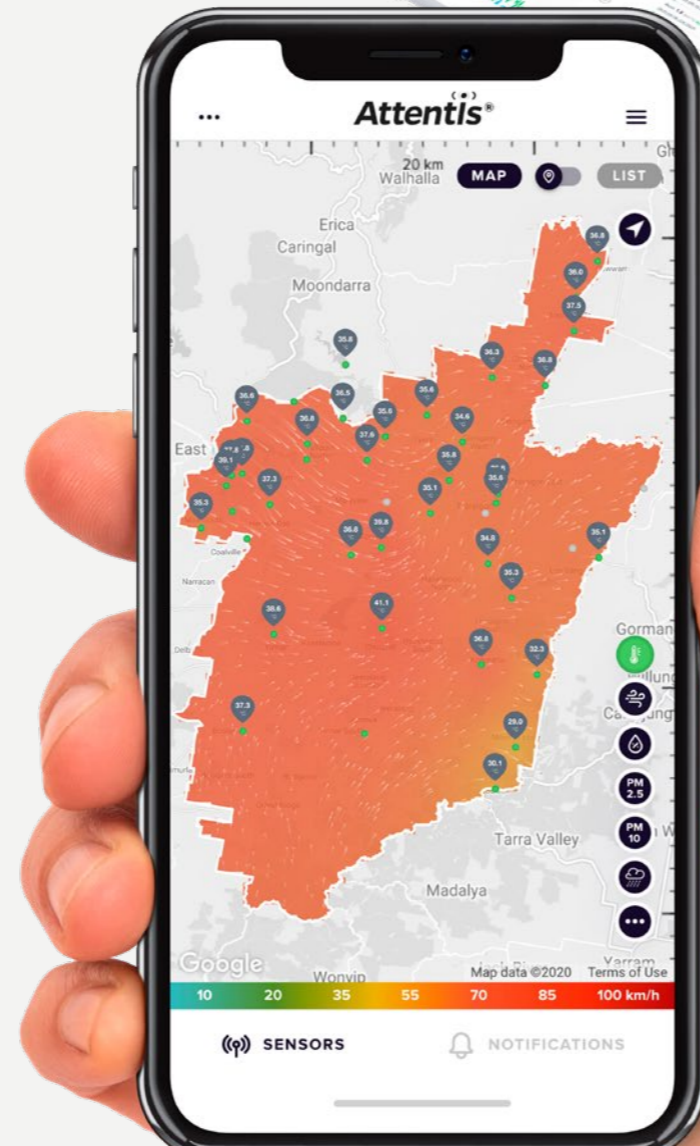
Users can access individual Attentis® multi-sensor locations to view 360° images and live conditions at each location to gain a clear understanding of an event as it unfolds.

The App provides individual customisable alert notifications to notify the user when air quality or weather conditions are unhealthy or unfavorable. Alert notifications can be viewed on any smart device, wearable, fixed or portable device.

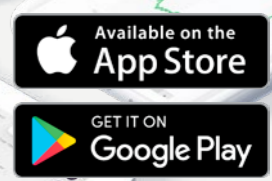
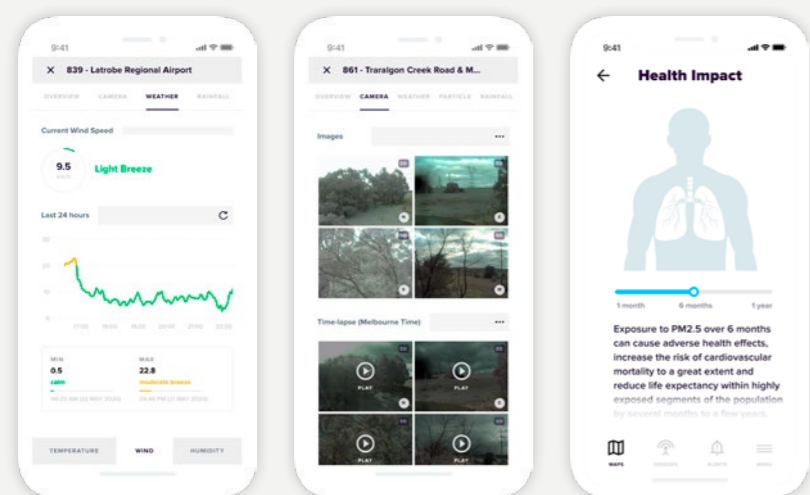
A clear user-interface accompanies real-time measurements to explain the impact of various air quality contaminants and ways to reduce or avoid exposure.

The visualisation of information on our live maps delivers greater comprehension of an event, creating an informed community, reducing calls to emergency call centres and local agencies.

The App is accessible by all emergency services, agencies and the general public.



The Attentis® main map details all live wind movements, event locations, air quality conditions and information about the event.





# Supporting public health and safety

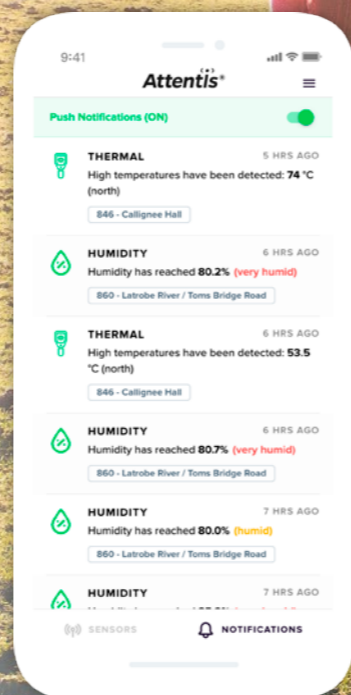
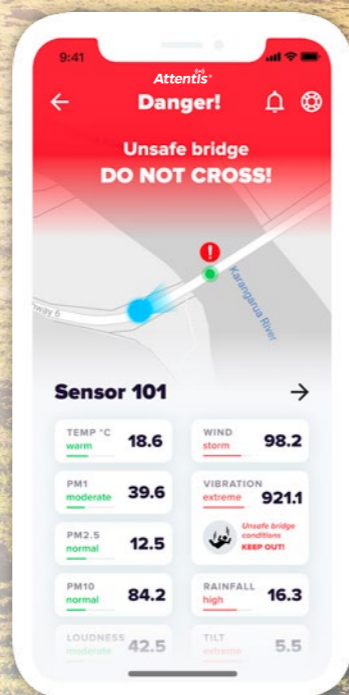
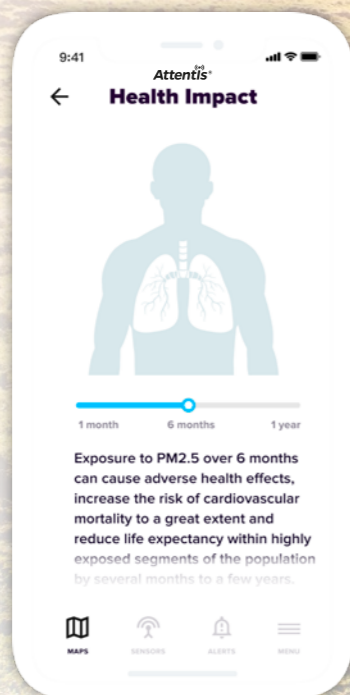
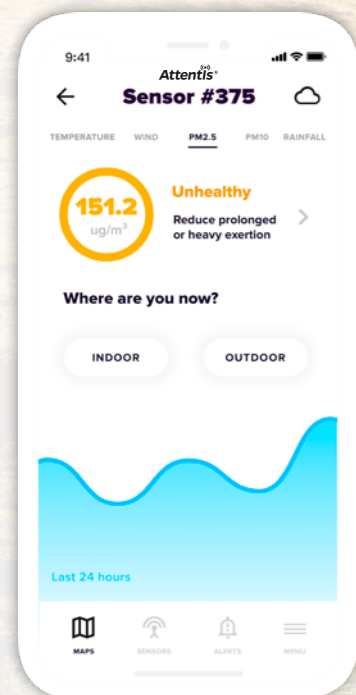
The Attentis® App connects you to your local environment in real-time.

The value of real-time / live local information lies in the ability for people to respond to an event.

Attentis® provides a comprehensive interactive App to support local governments, agencies, emergency services, industries and communities - providing access to live local conditions and information to support greater awareness, safety and health.

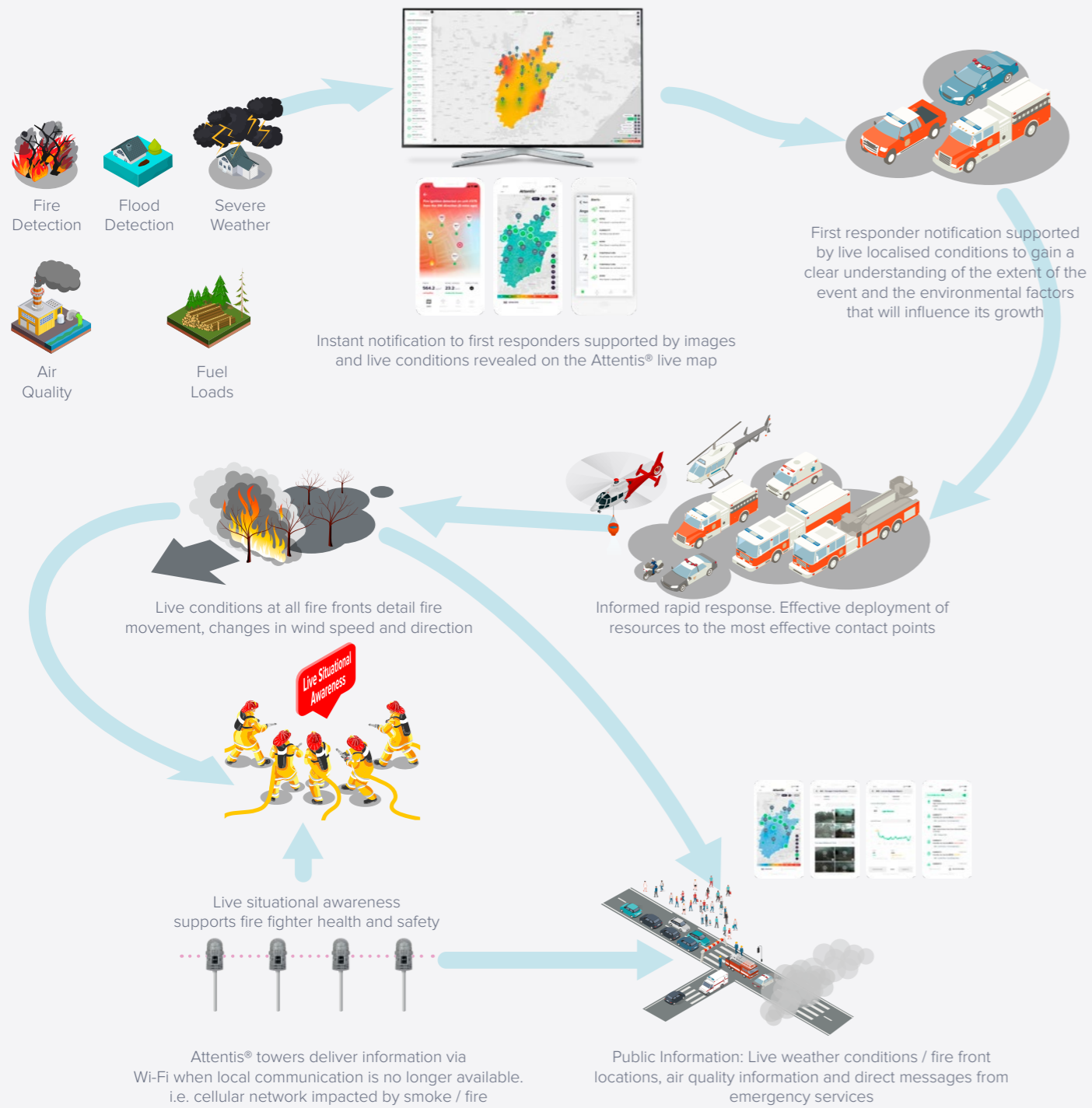
Live local micro-climate weather, air quality readings, river heights, rainfall information and images are supported by warnings, notifications and live conditions to aid rapid, informed decisions.

Local agencies and emergency services can send messages directly to local residents detailing events, updates and information to reduce impacts.



Attentis® technology delivers critical elements for the future of fire, flood and natural disaster management

Early detection, live situational awareness and access to information to make informed decisions



Attentis® combines early detection, live information, tracking, notification and communication systems in a single high speed network.

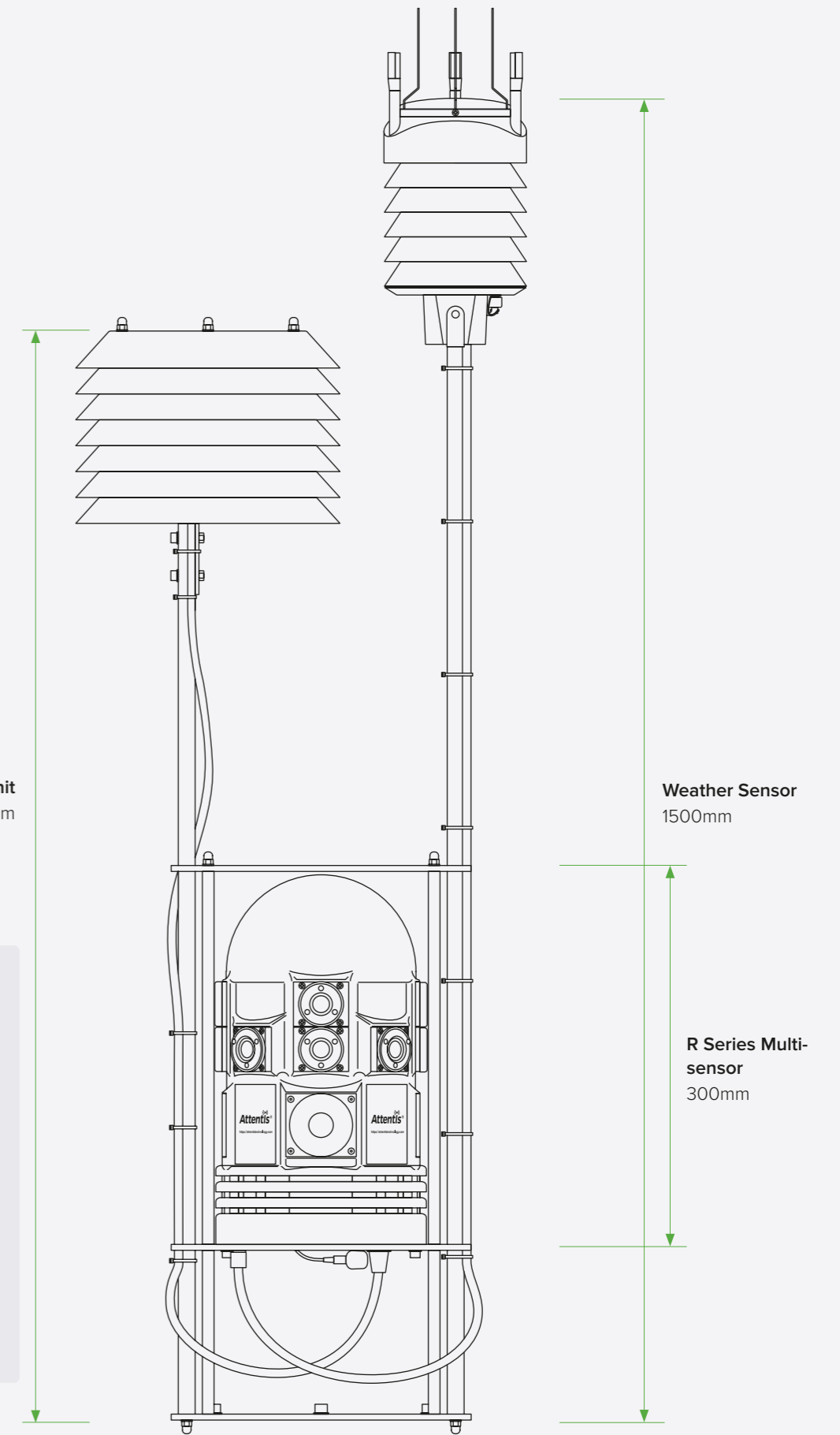
The Attentis® Latrobe Valley Information Network (LVIN) demonstrated the capabilities of our technology to provide early warning of fire ignition and floods. This technology will be key in the future to support resilient informed communities in natural disaster prone areas.

Air Quality Unit  
950mm

Weather Sensor  
1500mm

- Multi-sensor: 3.8kg
- Stainless Cage: 7.4kg
- Air Quality Station: 1.7kg
- Weather Station: 1.6kg
- Power Options:
  - PoE
  - -48V
  - 110V
  - 240V
  - Internal Battery
  - Solar

R Series Multi-sensor  
300mm





# Thermal and Visual Imaging

Fire ignition in remote locations can occur at anytime, day or night, from a range of sources.

### Protecting critical infrastructure and resources

Attentis® thermal imaging enables 24-hour remote monitoring of critical infrastructure, remote assets (i.e. forests, substations, coalmines and powerlines) and high fire risk locations to detect ignitions, monitor risk levels and provide the ability to rapidly respond.

Attentis® offers a vast range of pre-calibrated thermal imagers and temperature measurement sensors, available in single point (90°) format measuring between 4,000 to 10,000 individual surface temperature measurements through to 360° sensors providing 32,000 to 80,000.

Attentis® designs and manufactures a range of short, medium and long distance lenses to tune the capabilities of thermal imagers to specific customer requirements.

### Non-visible flame detection

Attentis® provides non-visible flame detection through wavelength transmission measurement. Coupling this capability with thermal imaging and air quality measurement, enables rapid detection across a vast range of ignition types including non-visible fire starts.

Undetected ignitions coupled with high winds and dry conditions can soon create fires that are difficult and sometimes impossible to contain. Early detection and rapid response are key elements to managing fire.

Attentis® pioneered unmanned 24-hour instant detection creating intelligent multi-sensors that provide 360° real-time thermal and visual imaging to detect fire starts (e.g. arson, lightning strike, powerline and accidental), re-ignitions, hot spots, movement and changes in thermal temperatures that lead to fires, faults, failures and outages.

### 90° to 360° real-time, live thermal and visual imaging

#### Still image resolution capabilities

Low bandwidth: 640x480 (480p)

Low resolution: 1280x720 (720p)

Standard resolution: 2592x1944 (1080p)

High resolution: 3280x2464 (8MP - 4K equivalent)

Ultra high resolution: 4912x3684 (18MP)

### Video resolution

Standard resolution: 480p at 30fps

High resolution: 1080p at 30fps

### Thermal imaging

10,000 points (90°)

80,000 points (360°)

Information type: thermal

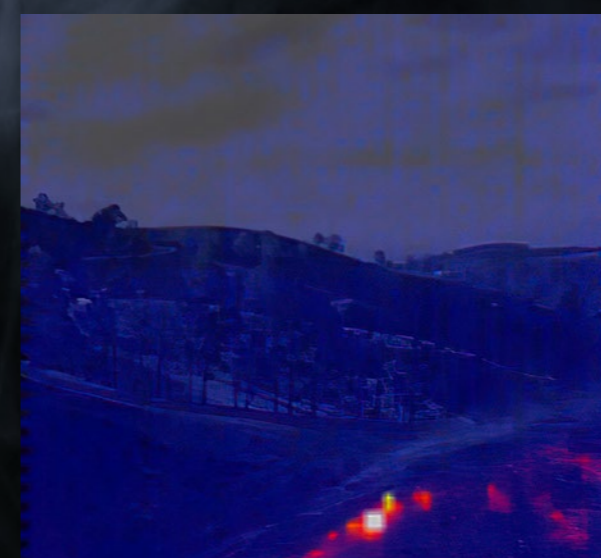
Minimum and maximum measurements

Historic thermal images

Hovering over the thermal image reveals the temperature measurement of each surface as individual readings

Hovering over the temperature graph reveals the temperature and time of each reading

Selecting Min/Max timestamp reveals all conditions and images at that time



Thermal image shows heat sources detected. This autonomous detection sends an alert to first responders including thermal and visual images and live conditions at the location



First responders can attend the exact location to extinguish the ignition

# Water monitoring

Attentis® networks measure electrical conductivity (an indicator of salinity levels), water flow rates, water levels (ground and well) and water pressures.

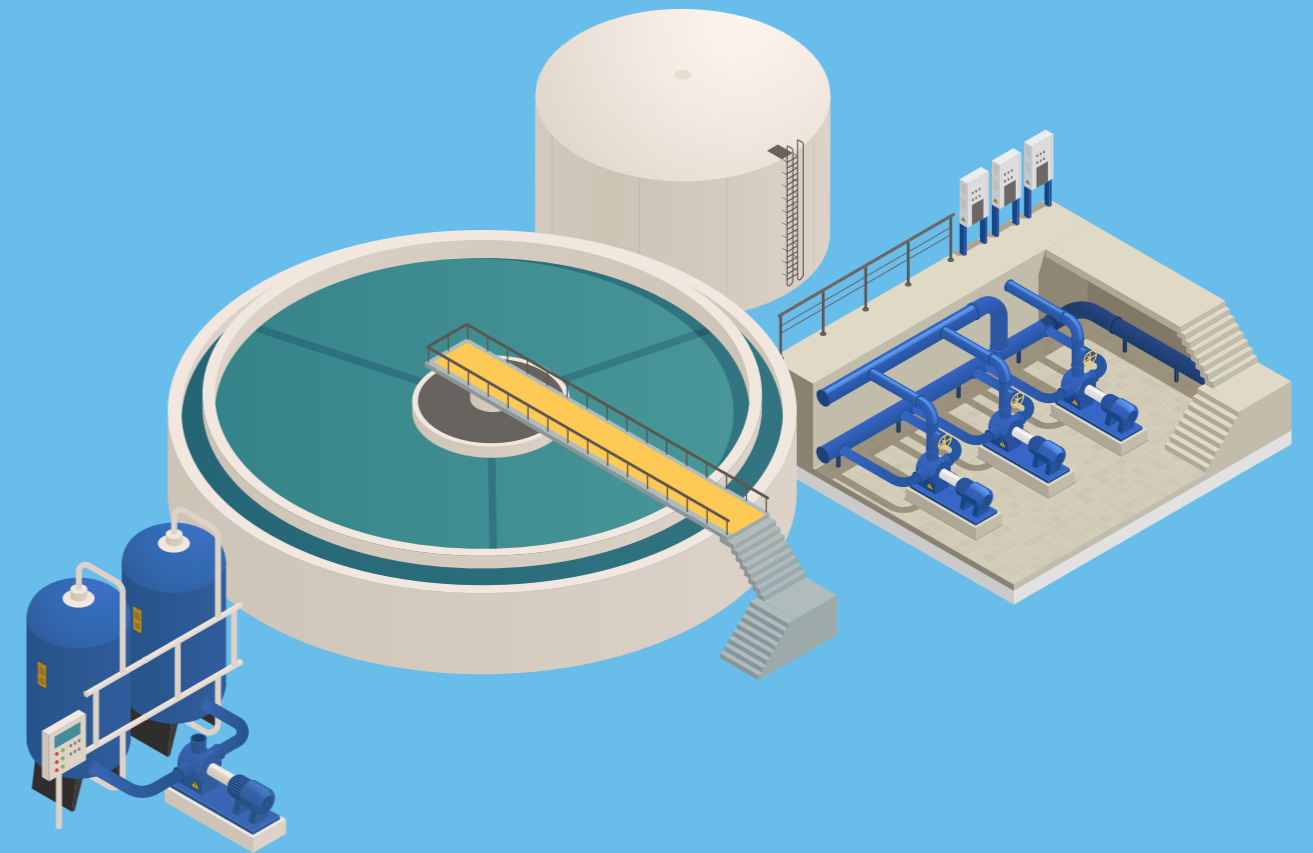
Attentis® designs and constructs fully integrated networks providing real-time continuous monitoring of all critical elements including water. Monitoring of water flow, condition and levels play an important role in maintaining operations, health and safety, efficiencies and quality of production. Identifying key changes in water quality and flow in real-time leads to identification of future impacts before they occur.

Continuous real-time monitoring provides live situational awareness, reduces site attendance and improves maintenance schedules as the system provides indicators to trigger on time maintenance rather than scheduled maintenance, reducing operational costs.

A network can incorporate the ability to automatically operate pumps, valves and components via the existing PLCs delivering an automated intelligent operating system.

This level of awareness, reaction and response reduces risk and improves outcomes.

Attentis® networks are modular in design and construction allowing the incorporation of existing systems and future expansion of new capabilities to maintain the highest standard of operational visibility, insight and control.



Maintain a clear understanding of water movement, usage and quality.

**Attentis® real-time water height and quality sensors provide:**

Water heights in storage facilities, wells and local rivers and streams

Water quality information

Water movement at facilities and in regional eco-systems

**When operational information is coupled with environmental conditions and rainfall throughout a region, a clear picture of water movement is revealed; in fine scale**

This feature supports greater understanding of localised water elements

Enables improved usage

Delivers greater insight for industries with heavy reliance of water for production

Improved monitoring and information for conservation and environmental management



# Air quality

Air composition is important for the health of every environment.

Attentis® multi-sensors feature fine-scale continuous real-time air quality measurement of a vast range of particulates and gases. Standard measurements include PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, carbon dioxide, carbon monoxide, sulphur dioxide and nitrogen dioxide. Further specific gas type detection is also available.

Measurement is performed by nephelometer optical particle counters using the scattered light principal.

Our world standard air quality measurement and reporting provides immediate notification of a threat, allowing first responders to engage mitigation measures to reduce exposure.

When multi-sensors are combined as a network, Attentis® delivers a unique capability to actively track live air movement and composition throughout a location or region, providing notification of threat type, impact time and concentration level. This early warning capability reduces exposure and the scale of impact.

During a fire event, live streamed air quality information allows first responders and the general public the ability to view live concentration levels across a region, understand the health risks and seek refuge to reduce exposure.

All air quality concentrations are presented live on the Attentis® dashboard with analytics, correlation and AI interpretation available through Attentis® Analytics.

**Fine-scale air-quality for continuous real-time and accumulative levels of PM<sub>1</sub>, PM<sub>2.5</sub> and PM<sub>10</sub> and other particulates**

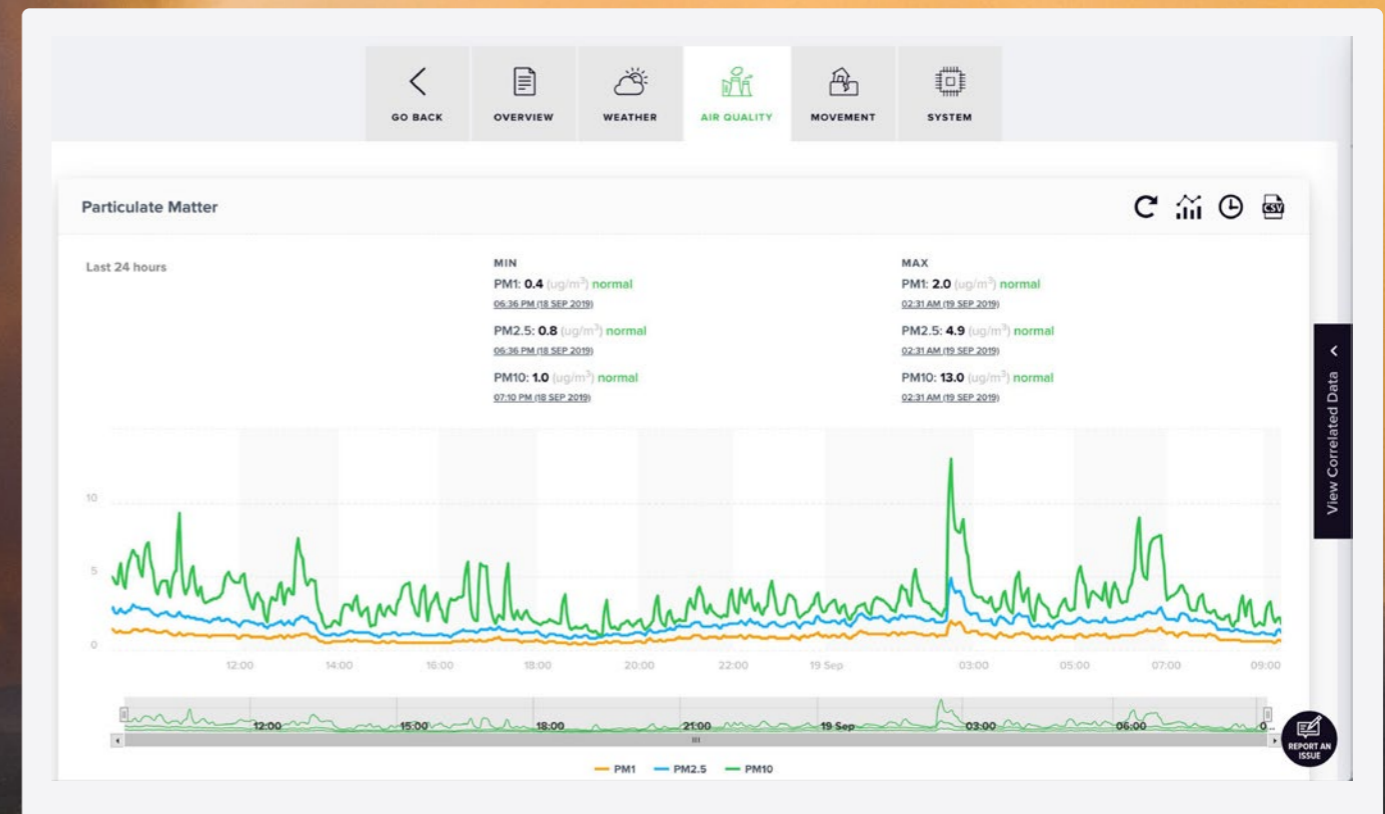
### Particulate measurement

- Ozone
- Carbon dioxide
- Carbon monoxide
- Sulfur dioxide
- Nitrogen dioxide
- Hydrogen sulfide
- Methane

**Tracking air quality concentrations allow emergency services to scale resources inline with future impact prediction**

### Compliant to AS/NZS 3580

Methods of sampling and analysis of ambient air determination of particulate matter







# Micro-climate weather

Attentis® networks provide continuous live correlated weather intelligence.

Attentis® live micro-climate weather information includes wind speed, wind direction, gusts, wind vectoring, temperature, rainfall, relative humidity, barometric pressure and soil moisture sensing. Dew, frost, Delta-T, Fire Danger Index (FDI) and spray drift calculations are also available.

Continuous measurement of river heights, rainfall and soil moisture provides early flood warnings, live water movements, identifies flood zones and details access routes and road impacts in real-time.

During a fire event, live streamed weather (combined with fire movement) allows the deployment of appropriate resources to key locations to minimise impact.

Due to the multi-communication and high speed data transmission capabilities of Attentis® multi-sensors, all information is continuously measured and displayed.

Attentis® weather sensors deliver world standard weather measure in line with the World Meteorological Organisation.

The application of A.I. learning capabilities to Attentis® data provides a new level of insight into changes in the local environment, enabling mitigation, improved planning and risk management.

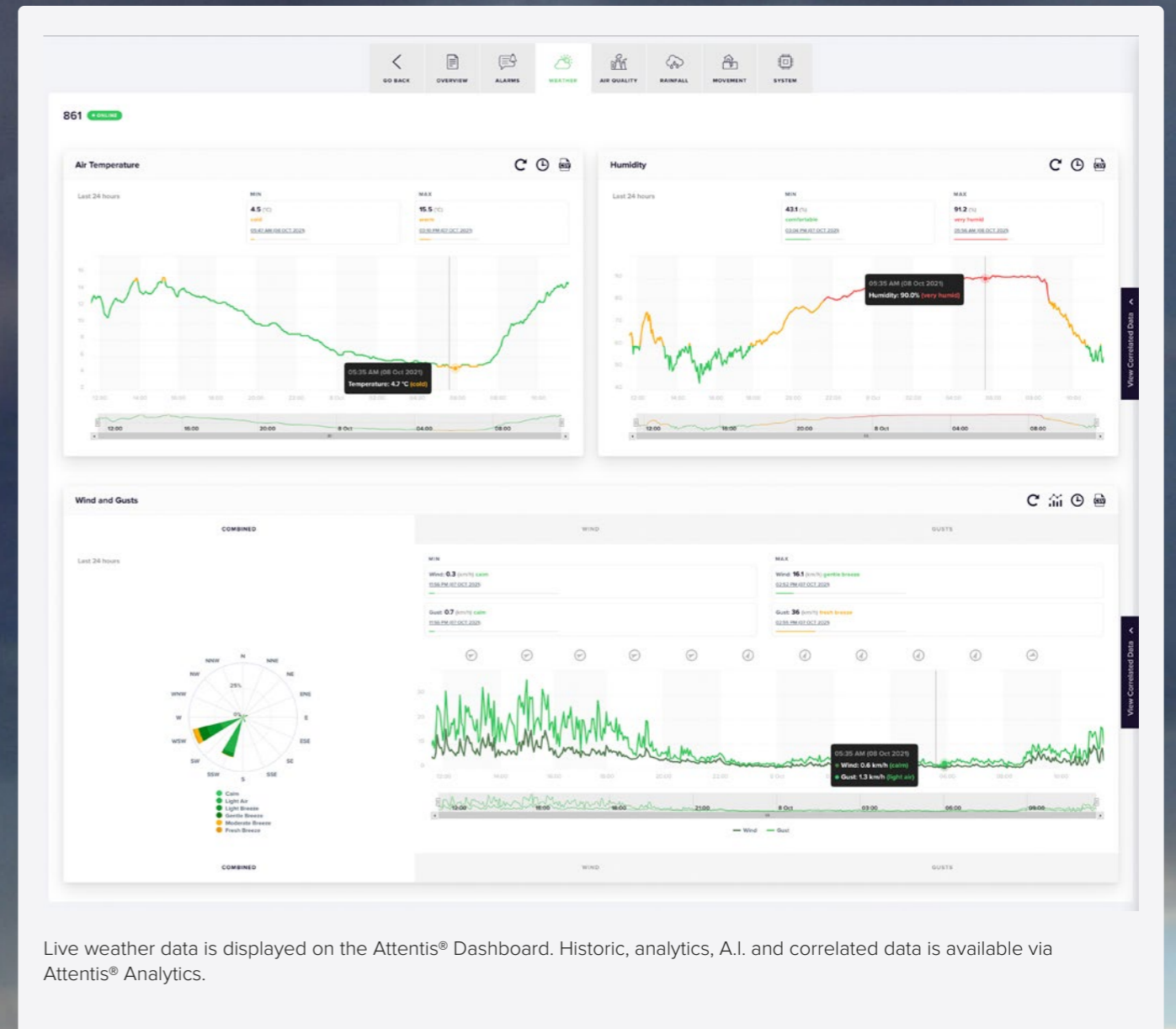
### Provides continuous fine-scale localised weather data

- Wind speed
- Wind direction
- Wind gust and vectoring
- Temperature
- Rainfall
- Relative humidity
- Barometric pressure
- Soil moisture sensing
- Delta-T
- Fire Danger Index

### World Standards compliance

- WMO (World Meteorological Organisation)
- BOM (Bureau of Meteorology)

Attentis® is a trusted provider of weather data to the Bureau of Meteorology through the TPAWS (Trusted Private Automated Weather Stations) Partner Alliance.



Live weather data is displayed on the Attentis® Dashboard. Historic, analytics, A.I. and correlated data is available via Attentis® Analytics.



# Lightning detection

Attentis® combines local and global lightning tracking.

Combining live data from Attentis® multi-sensors in the field with Vaisala's global network of lightning sensors (GLD360) provides the most comprehensive live localised lightning tracking available today.

This network feature allows you to track approaching thunderstorms and lightning activity in real-time and provide an alert detailing the location of the lightning.

An API can also push alerts to an existing notification system (i.e. broadcast SMS or flash message on a DMR radio) notifying all on-site personnel. Warnings detailing approaching severe weather and lightning discharges maintains personnel safety and the ability to track fire ignition locations.

**Combines local and global lightning tracking**

---

**Live data from Attentis® multi-sensors in the field with Vaisala global network of lightning sensors (GLD360)**

---

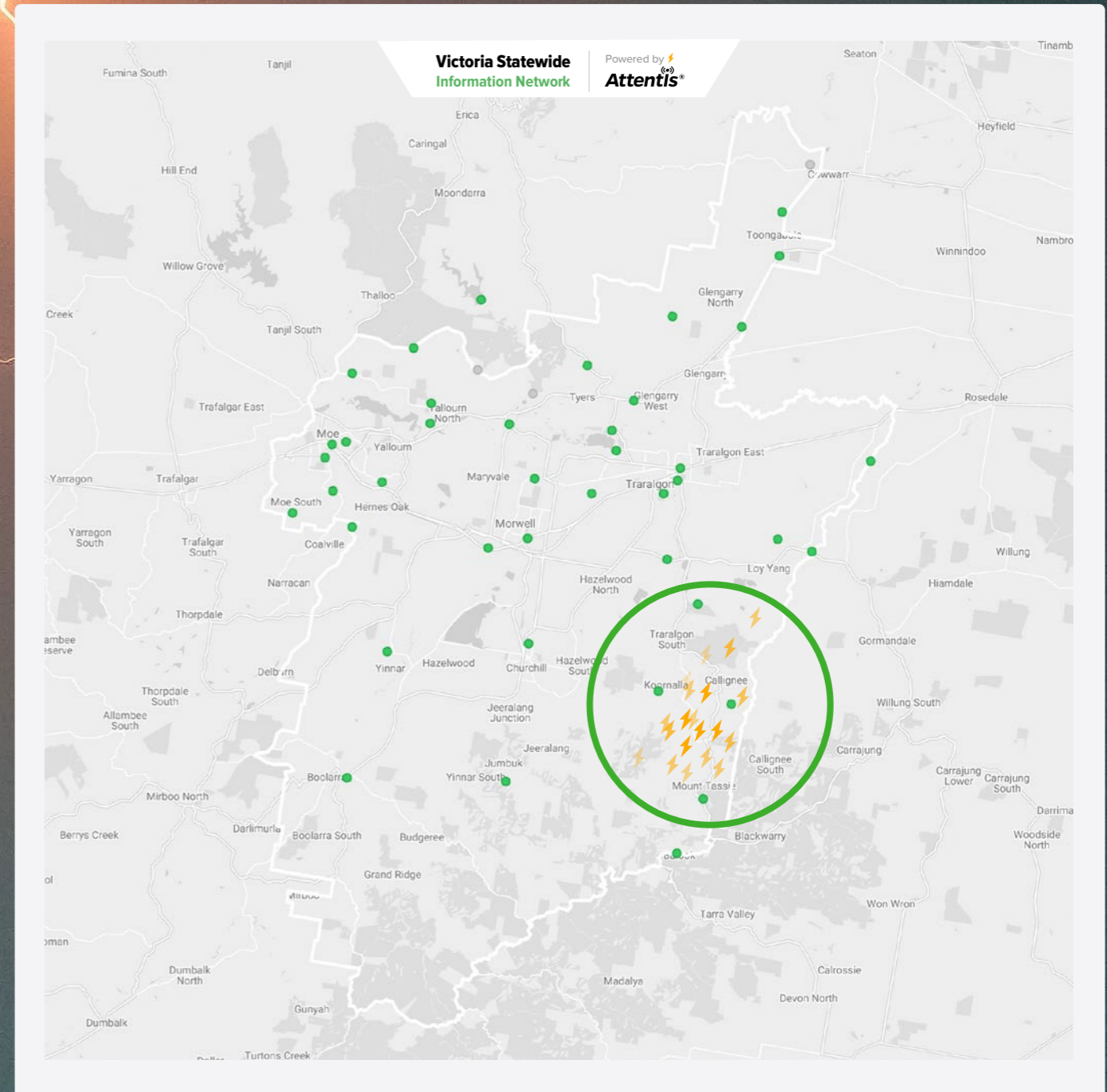
**Track approaching thunderstorms and lightning in real-time**

---

**Alert captures current location of lightning activity**

---

**API can push notifications to other notification systems (broadcasts SMS, to DMR message channel)**



# Movement

Attentis® constructs ground, tower and structural movement sensors to detect fine scale movement.



Attentis® R Series multi-sensors are available with continuous vibration and movement sensing (measured in RMS) to determine structural integrity issues in both real-time (sudden onset) and aggregated time (long-term structural degradation of the structure itself).

Applications include equipment, transmission towers, powerline monitoring, structural footings, walkways, structures, dam and mine walls.

Lightweight applications employ our small 0.55kg cigar sensors, wirelessly transmitting data to a main R Series multi-sensor (3.8kgs). Multiple cigar sensors can be used in any installation to measure multiple elements.

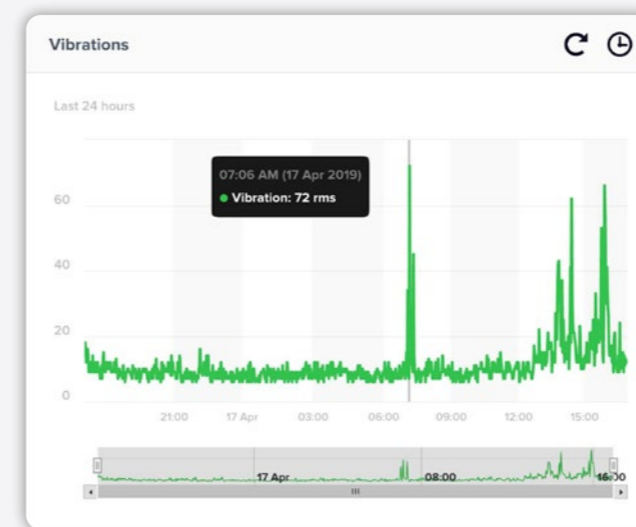
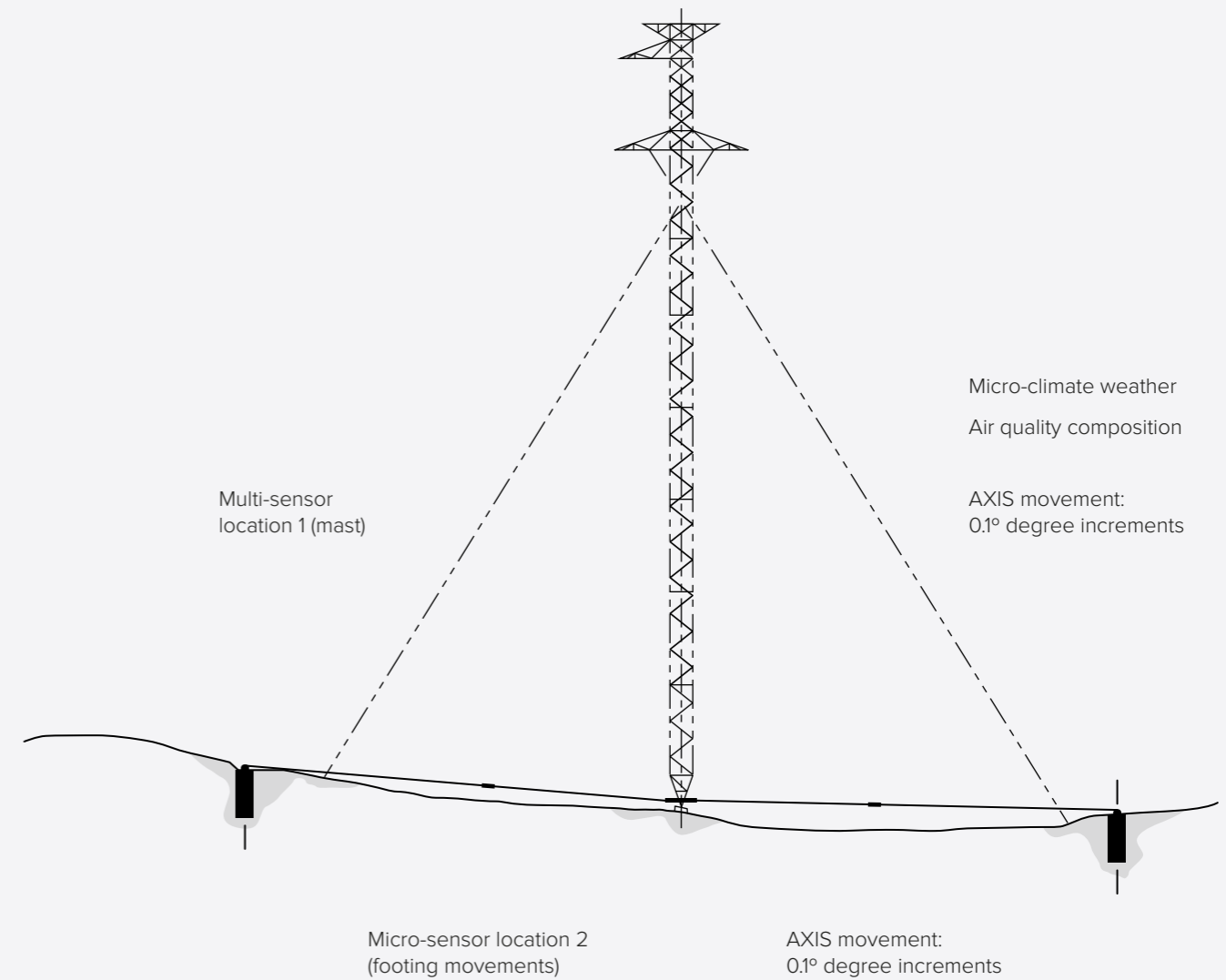
Optional noise, air quality sampling, harmonic balance, frequency tracking, micro-climate weather, 360° visual cameras, flame, arc and spark detection and thermal imaging capabilities can also be incorporated to pinpoint an issue or concern.

## Movement – multi-axis and GPS assisted

### Vibration

### Correlation with other influencing data

- Wind speed
- Wind direction
- Air quality
- Audio
- Thermal imaging and detection
- Visual imaging - still, video, A.I. enhanced
- Harmonic balance
- Frequency tracking



Vibration is reported in real-time and over-time analysis. Tilt maintains a visual reference to movement of a structure (sway) providing notification when outside normal parameters.

# Powerline

Attentis® provides real-time monitoring of energised and de-energised lines through small wireless sensors, referred to as cigars.

Wireless cigar units are small lightweight (0.55 kG) sensors used to measure minor movements and line proximity, transferring data to a central R Series multi-sensor.

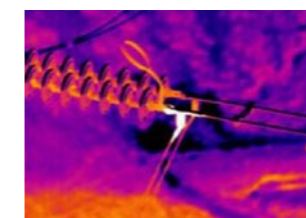
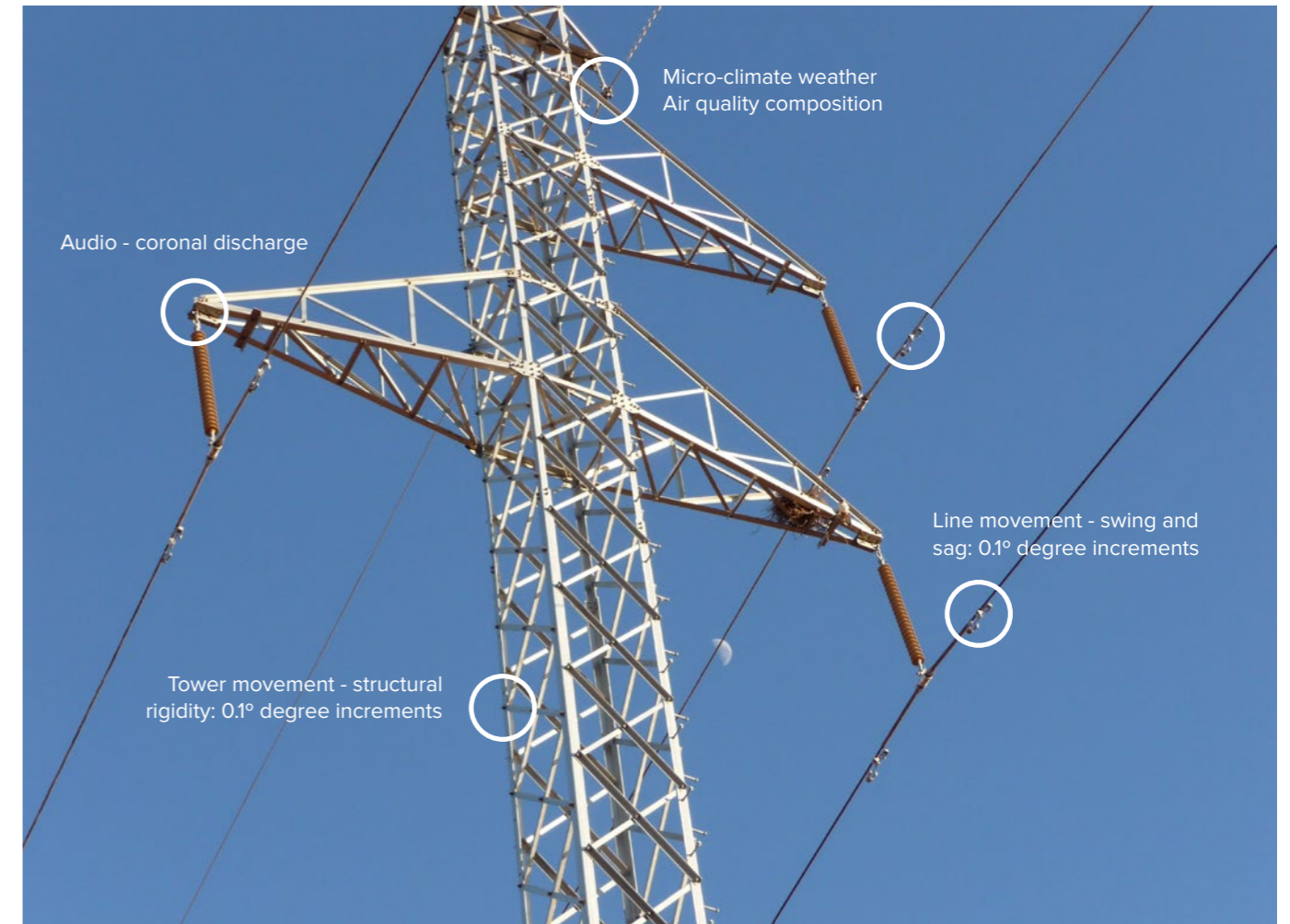
### Wireless Cigars:

- Monitor swing and sag of each powerline to enable pinpointing of sections of vulnerability
- When coupled with live wind information from the main R Series multi-sensor, weather related impacts on individual powerlines can be identified
- Monitor impacts and effects of increased voltage / load through the lines (line sagging)
- Provide early warning of line integrity issues (clashing / movement) to enable rapid response; site attendance / power shutdowns
- Can incorporate smoke detection to identify the presence of smoke at each location - a low cost early detection network for fire starts

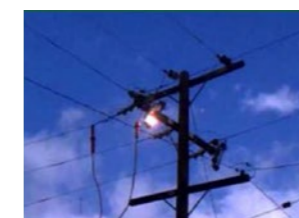


### An integrated network, supported by A.I. and analytics:

- Detail air and wind movements throughout line spans to increase resilience throughout high risk areas
- Enable informed decision making regarding level of risk, need for shutdown and visibility when lines are to be re-energized
- Average wind speed throughout each zone is recorded and analysed
- Long term maintenance mapping to identify lines and locations that experience increased weather and environment impacts
- Correlation of wind and tower movement data to identify FMEA (Failure Mode and Effects Analysis)
- Creation of an environmental baseline of conditions to aid future planning and powerline construction objectives



24-hour thermal inspection for arc, flame and fatigue



24-hour ignition detection, line swing and sag monitoring



360° remote visual inspection

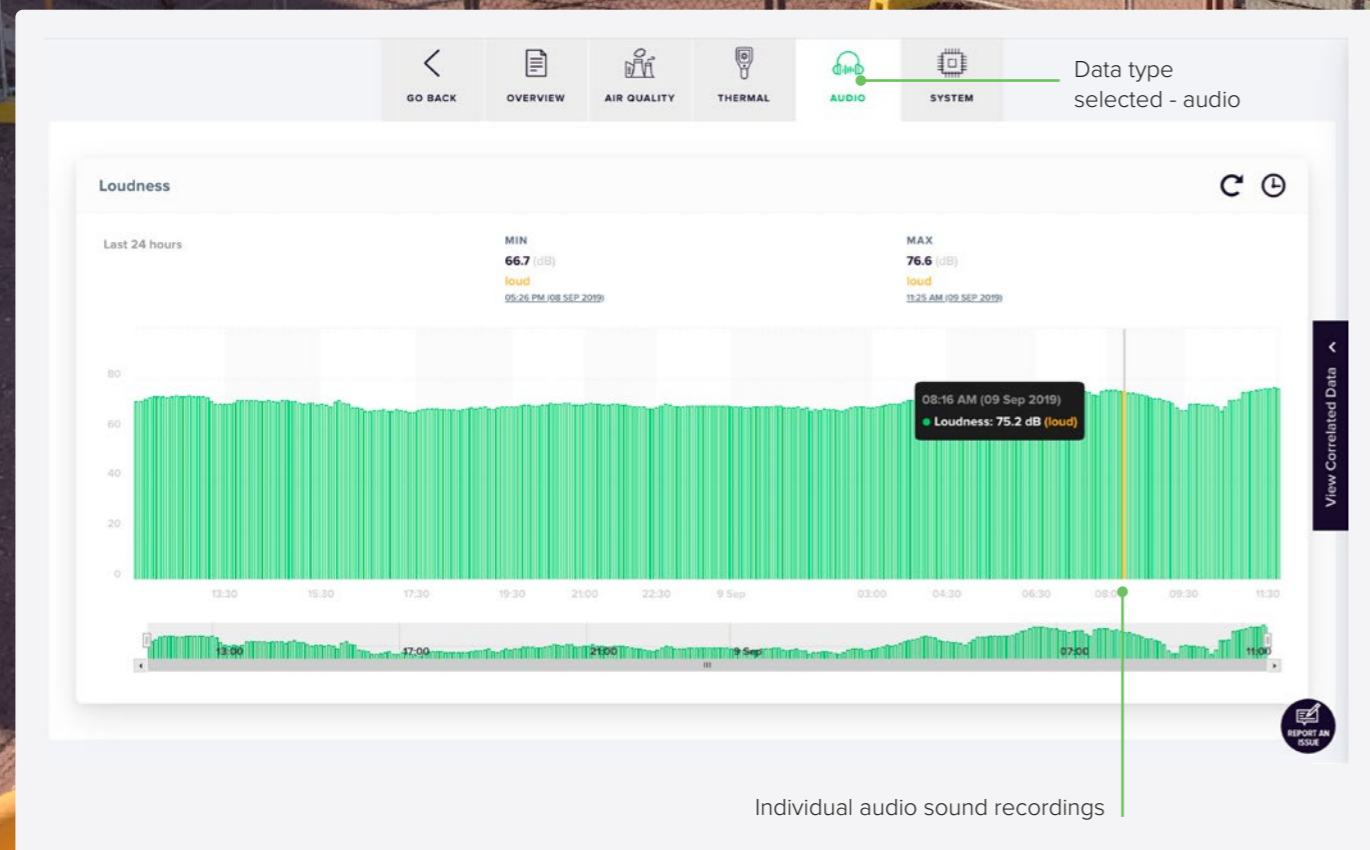


24-hour structural movement monitoring

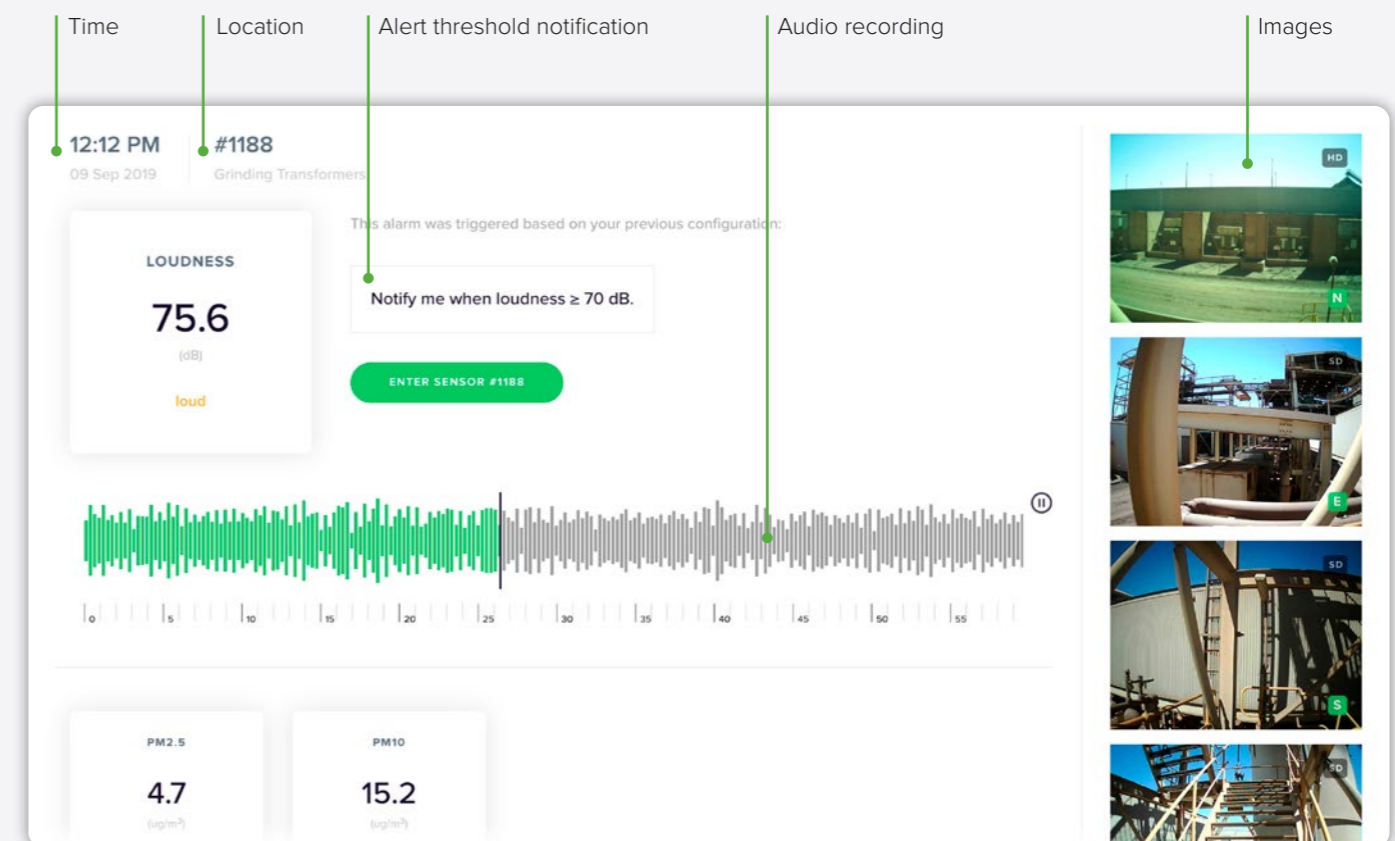
# Audio

Attentis® R Series multi-sensors are available with audio recording and playback.

Audio monitoring provides an additional layer of insight highlighting minor changes that indicate future failure. Active monitoring and tracking of audio provides detection of operational impacts including component wear and end of life. Combining audio tracking with visual and thermal imaging can identify current and future faults, prior to outage, shutdown or catastrophic failure.

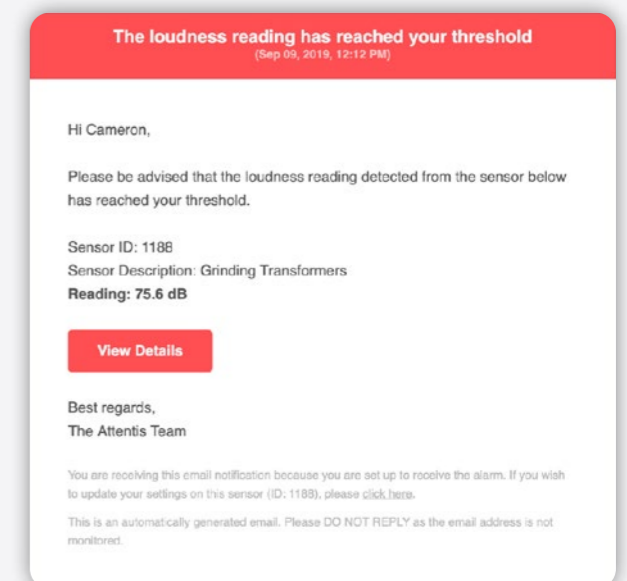


# Audio alert notification



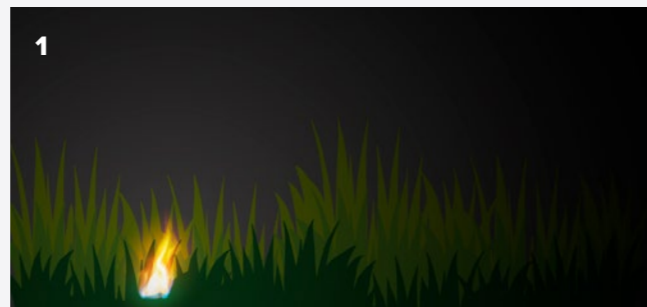
Noise levels exceeding the preset threshold trigger an instant alert notification, sent via SMS and/or email.

Audio alerts detail the time, location, highest reading, on site images and feature an accessible MP3 audio file to identify the source of the noise.

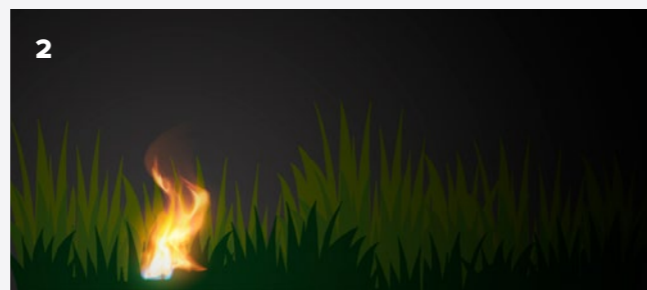


# Artificial Intelligence

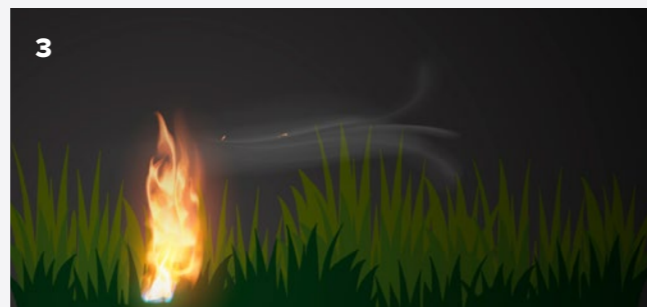
Attentis® multi-sensors incorporate artificial intelligence to determine variations and changes in images and environmental factors to reveal trends, growth rates and indications of future failures.



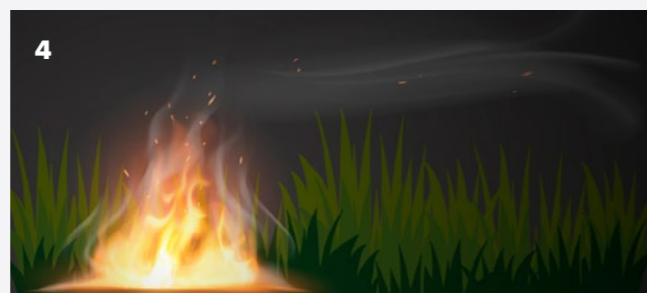
1 Continuous image capture identifies ignition



2 Alert sent detailing changes (presence of flame) and conditions



3 A.I identifies growth rate and direction



4 Continuous imaging reveals movement, intensity and growth

Actively tracking minor changes in surfaces, terrain and landscapes can identify early signs of future impact, allowing mitigation measures to be engaged prior to catastrophic failure. Attentis® incorporates Artificial Intelligence into every multi-sensor, measuring multiple elements at each location to provide unparalleled insight into environmental factors that influence events, operations, maintenance and management.

Attentis® patented technology delivers fine scale continuous measurement, correlation, analytics and A.I. processed in the device (edge computing) as well as the cloud, maintaining all capabilities when connectivity is interrupted.

Defined preset alert parameters (e.g. growth rates, surface changes, increased equipment operating temperature) trigger an alert once the threshold is reached, delivering notification, mitigation and scheduled maintenance crews to attend.

Applying A.I. vastly improves asset and operations management, is a low cost / high value resource and identifies conditions that would normally go unnoticed and in many cases only becoming apparent through physical attendance or failure.



Active processing of images highlights variations, changes, object visualisation and determination

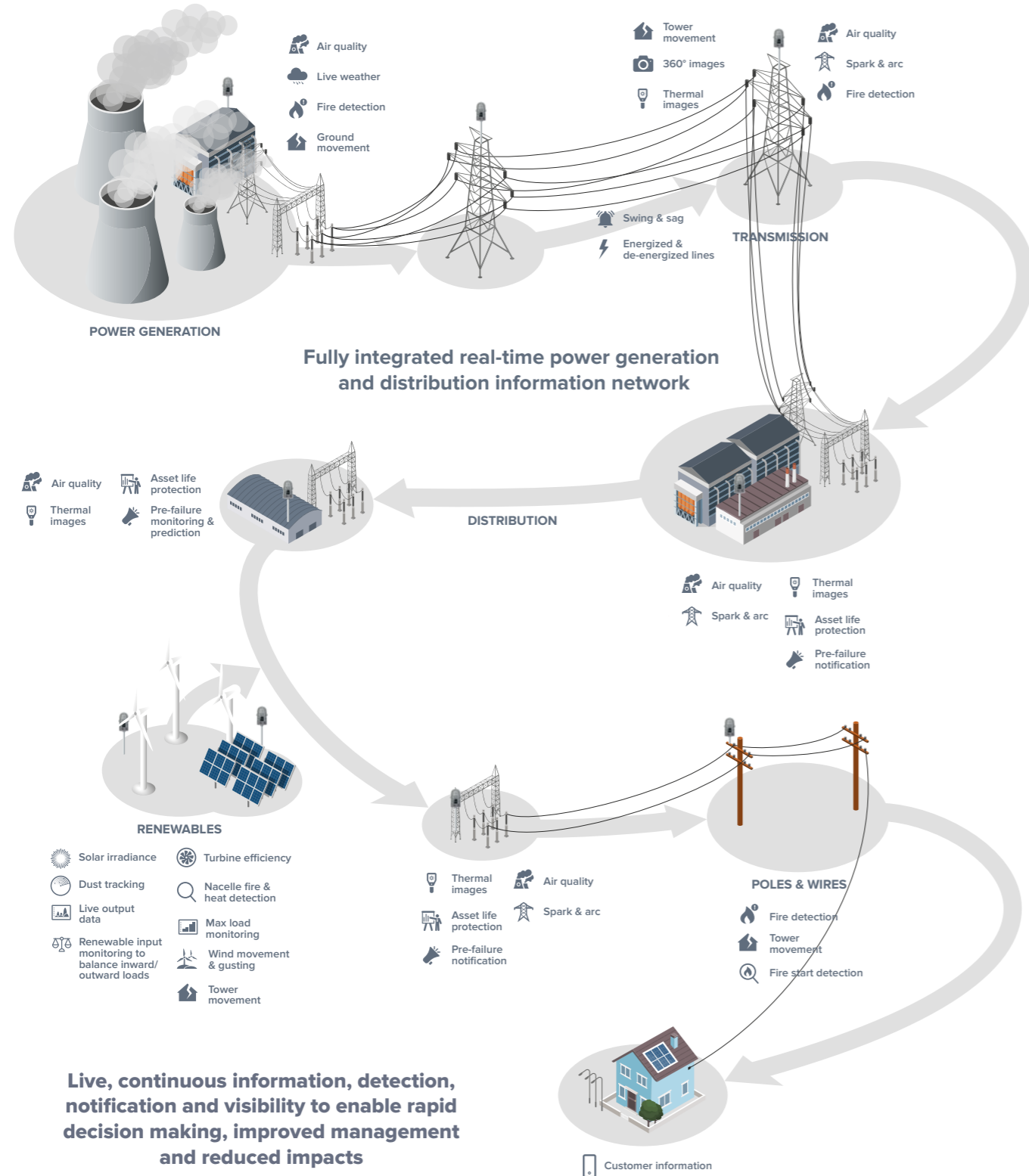


Remote gearbox monitoring to predict probability of failure/rate of decline. The ability to have complete visibility of processing operations with only skeleton staff present

### Active monitoring of critical infrastructure

Attentis® R Series multi-sensors and accompanying micro-sensors work in unison to actively monitor a range of critical assets and infrastructure to provide improvements in:

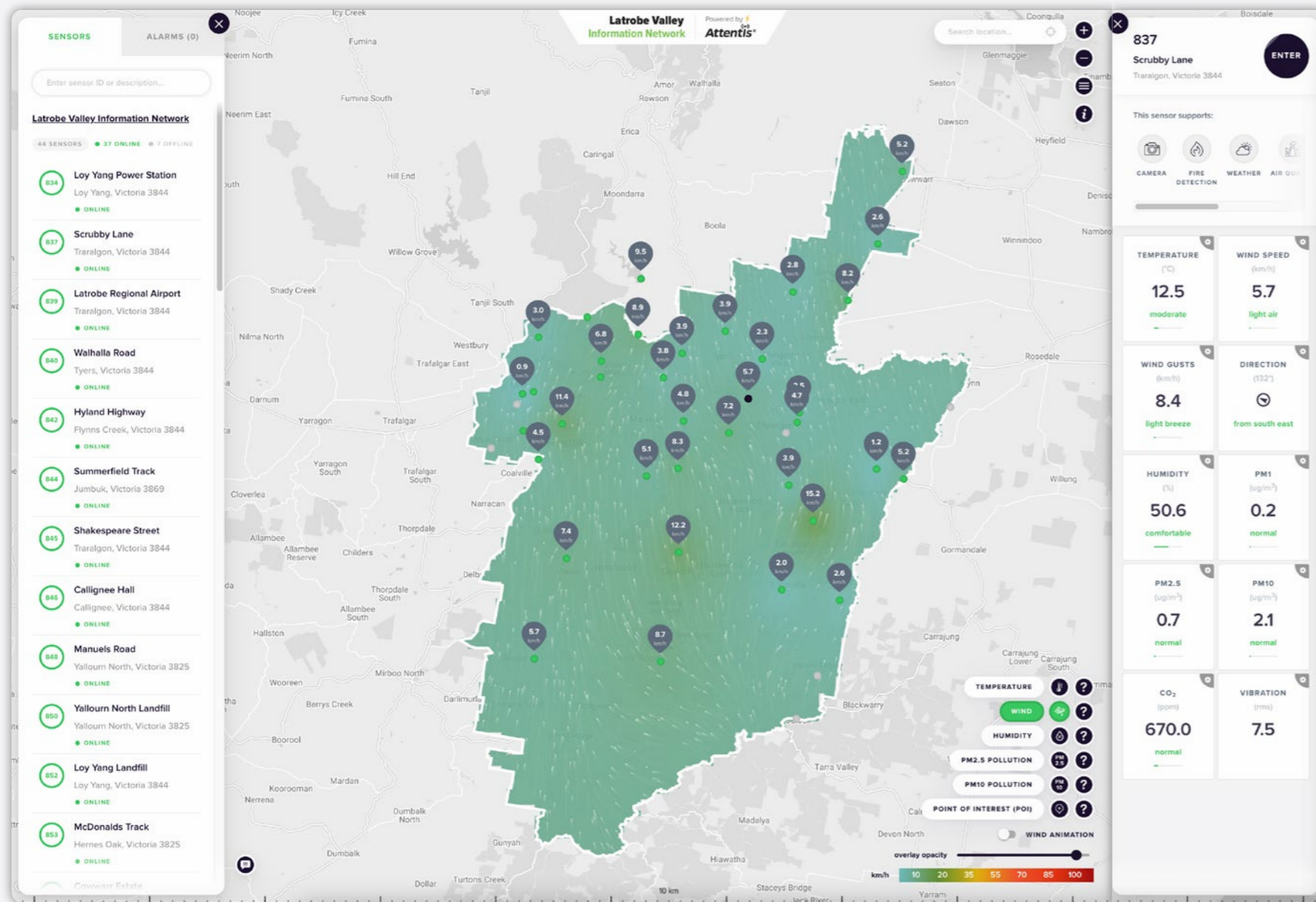
- Visibility
- Mitigation
- Early detection
- Remote asset management



### Mining Use Case



# Real-time information



## Attentis® Network interface

Attentis® constructs a range of interactive interfaces and Apps combining all site specific data into a single intelligent interface with navigational ease and information accessibility a priority.

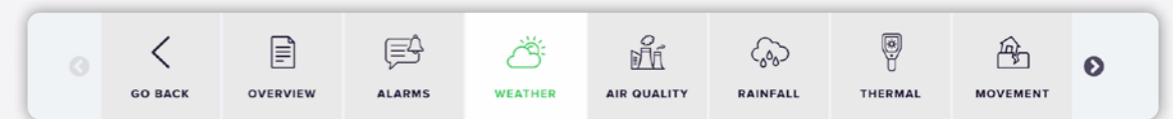
Information is provided in real-time, correlated and historic formats to provide new levels of insight and understanding.

Selecting temperature, wind, thermal, humidity, air quality, accumulation or rainfall readings instantly reveals historic information, minimum and maximum recordings, access to

previous alerts and comparison data to enable analysis to reveal correlations, trends and prediction.

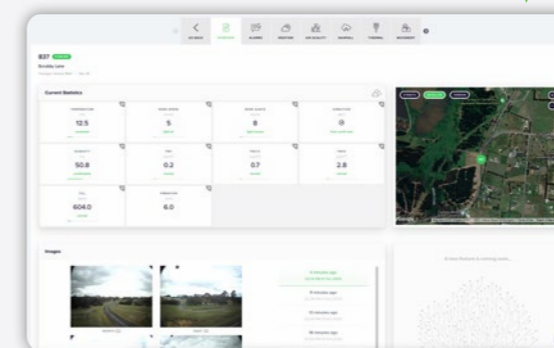
All Attentis® interfaces are designed to gain the confidence of the user, enabling greater interaction and understanding of factors that impact operations, assets, locations and environments.

An entire range of customisable features, alerts, highlights and notifications enable individual users to combine integrated features to suit their individual requirements.

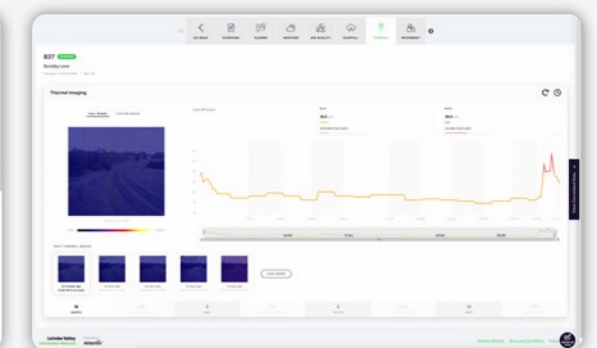


Interface tabs provide the ability to drill down into each sensor capability.

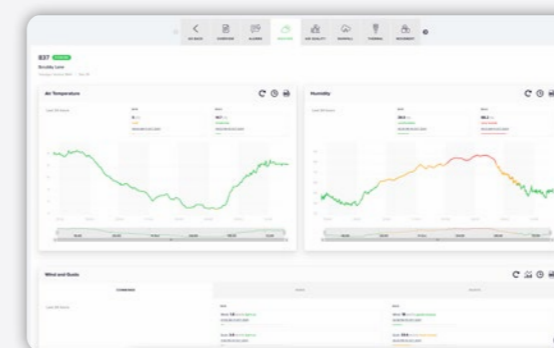
Historic information, minimum and maximum recordings, access to previous and comparison data for correlation, trends and prediction.



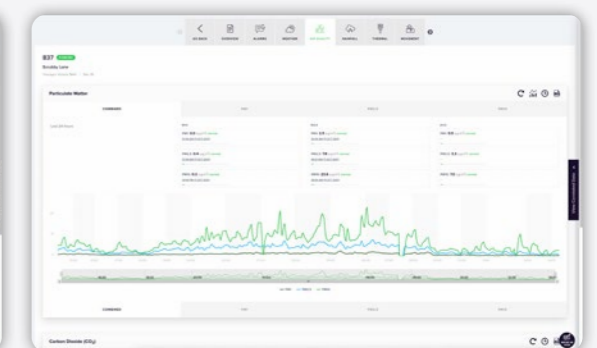
Individual site screen - all information



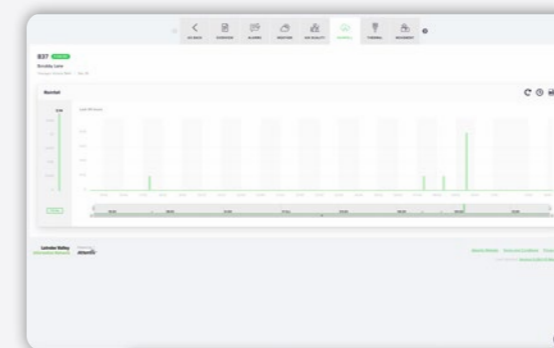
Thermal imaging and tracking - 360°



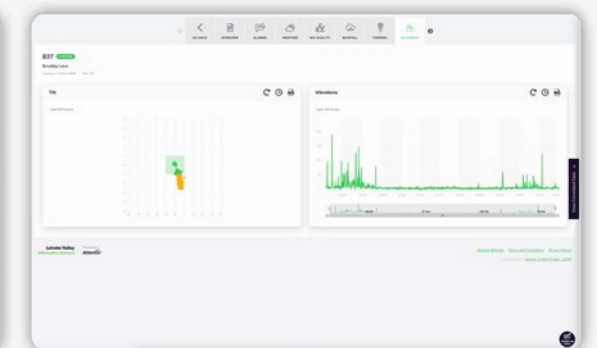
Weather - graphed conditions for 24-hours



Air quality monitoring - multiple particulates and gases



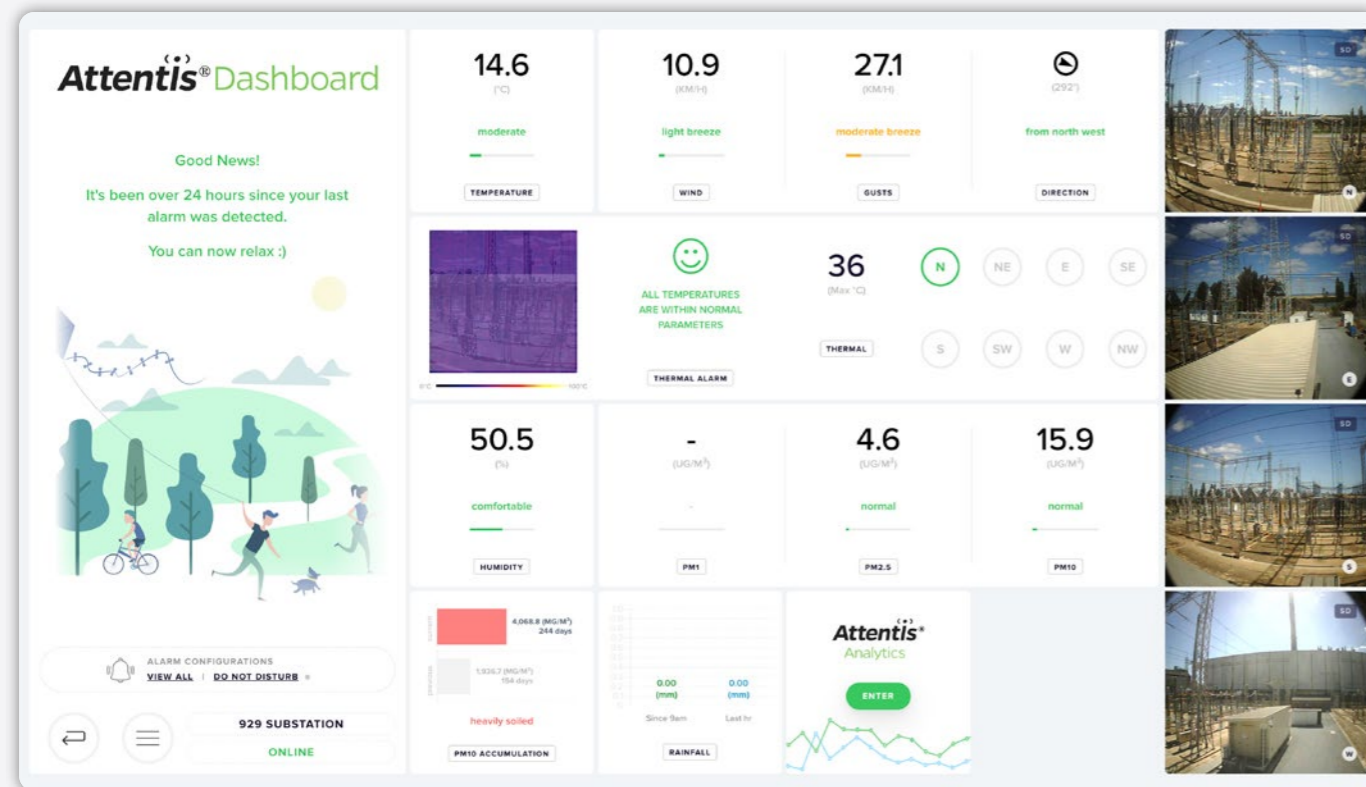
Rainfall tracking at the location



Movement - vibration / tilt / safe parameters



# Dashboard



Attentis® Dashboard enables users to view all conditions at a specific location including visual and thermal images.

Selecting a current condition reading tab reveals historic information with selectable timeframes. Alert thresholds for every parameter can be established through the Alarm menu.

The Dashboard allows users to interrogate a location to view all real-time conditions, images and correlations supported by access to detailed historic information.

Attentis® Dashboard provides the ability to rapidly investigate an event or changes at a specific location to enable improvements in operations, maintenance and site management.



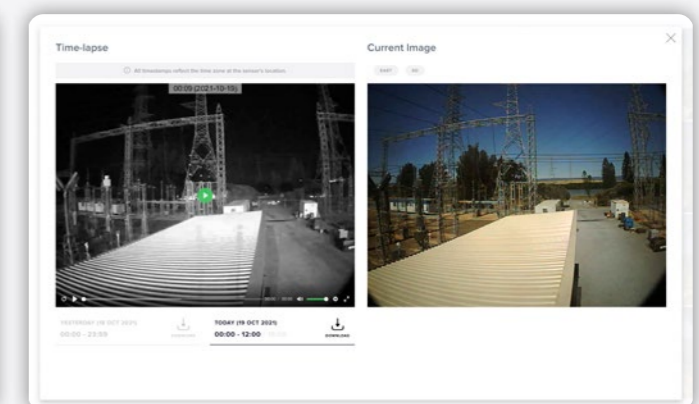
Temperature monitoring



Air quality monitoring - multiple particulates and gases

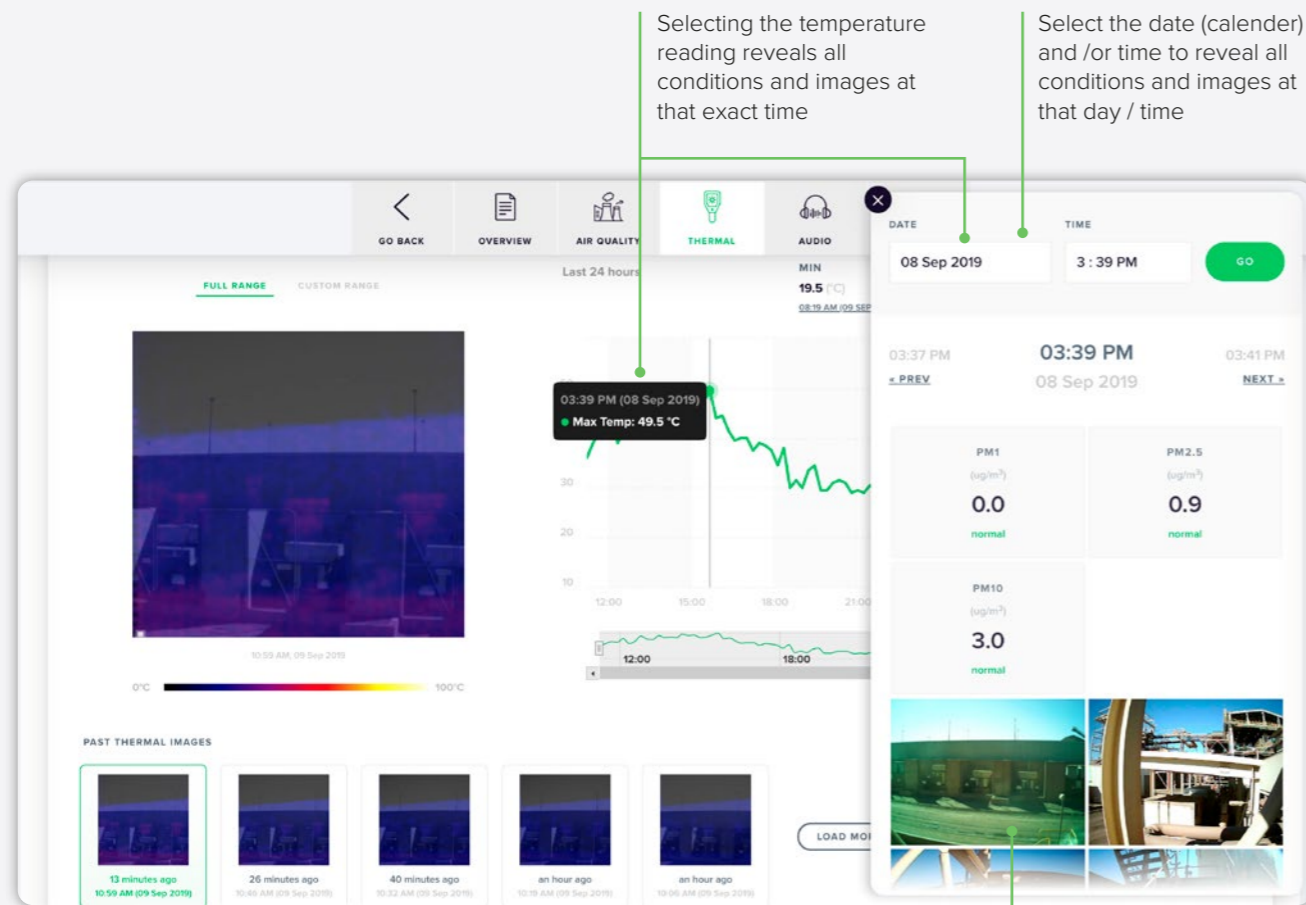


Wind monitoring



Time-lapse imagery

# Data Correlation

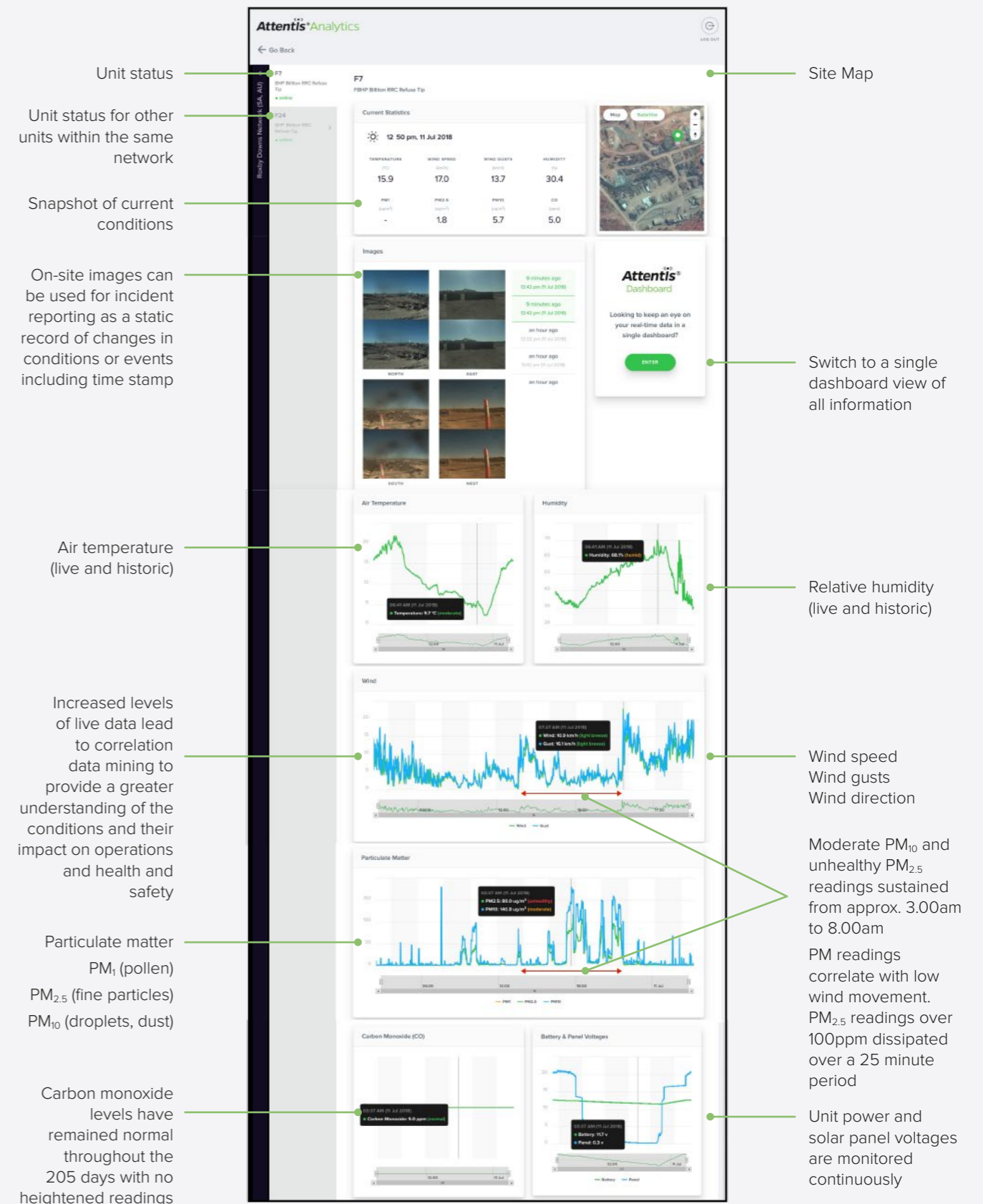


Images on 8th Sept at 3.39pm

## Correlated data from a specific day / time

Correlated data is designed to reconstruct an event or determine a future component failure.

# Analytics Dashboard





In 2019, Attentis® validated the local community and industry need for live, relevant, reliable, localised information through the construction of the Latrobe Valley Information Network.

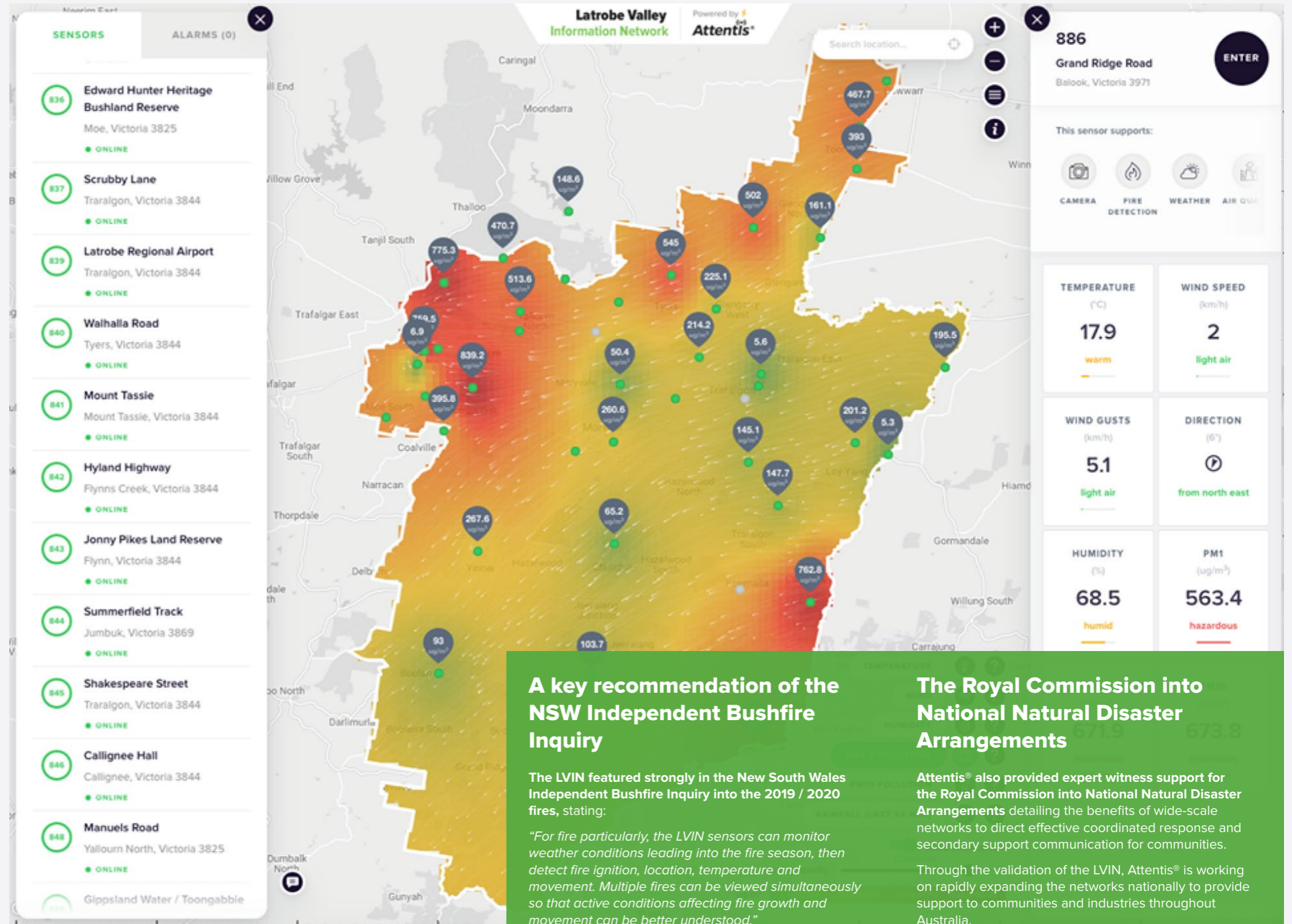
Incorporating real-time micro-climate weather, air quality monitoring, fire start, smoke and flood detection, soil moisture, ground movement, active rainfall and multiple communication into a single intelligent data network, Attentis® created the largest environmental monitoring network ever constructed, globally.

The Latrobe Valley Information Network (LVIN) is a live regional support system providing early detection of critical events (fire ignition, floods, air quality), uninterrupted situational awareness and access to real-time information for the entire local community, supporting public health, safety, and community confidence, everyday.

Access to both live and historic data enables local industry and businesses to assess trends, make informed decisions, engage mitigation actions, improve productivity and yield, contributing to regional GDP, local job growth and community resilience.

The LVIN has delivered operational improvements for local agriculture, utilities, forest industries, health services and emergency management, employed local contractors and businesses during construction and restored public confidence in the wake of the Hazelwood mine fire.

This network has become a staple for local industries, government agencies, utilities, local government and thousands of local and neighboring residents, accessing the network on a daily basis.



[www.lvin.org](http://www.lvin.org)

### A key recommendation of the NSW Independent Bushfire Inquiry

The LVIN featured strongly in the New South Wales Independent Bushfire Inquiry into the 2019 / 2020 fires, stating:

*“For fire particularly, the LVIN sensors can monitor weather conditions leading into the fire season, then detect fire ignition, location, temperature and movement. Multiple fires can be viewed simultaneously so that active conditions affecting fire growth and movement can be better understood.”*

*“Installations such as this in high-fire risk areas of NSW, especially near towns and cities, would be an important, relatively cheap and relatively quick development.”*

Forming the basis for recommendations 4, 34 and 35.

### The Royal Commission into National Natural Disaster Arrangements

Attentis® also provided expert witness support for the Royal Commission into National Natural Disaster Arrangements detailing the benefits of wide-scale networks to direct effective coordinated response and secondary support communication for communities.

Through the validation of the LVIN, Attentis® is working on rapidly expanding the networks nationally to provide support to communities and industries throughout Australia.

The benefits of the technology will provide the platform for proactive disaster mitigation, public safety, critical infrastructure protection, agricultural yield improvement and community resilience.



## **Attentis - Head Office & Manufacturing**

+61 3 6144 6060

3 Kembla Street, Cheltenham  
Victoria, Australia 3192

## **Attentis (California)**

+1 805 390 4517

30941 Agoura Road, Suite 310  
Westlake Village, CA 91362, USA

**[www.attentistechnology.com](http://www.attentistechnology.com)**

---

Creating intelligent sensor networks is a major step in understanding environmental factors that impact our daily lives.

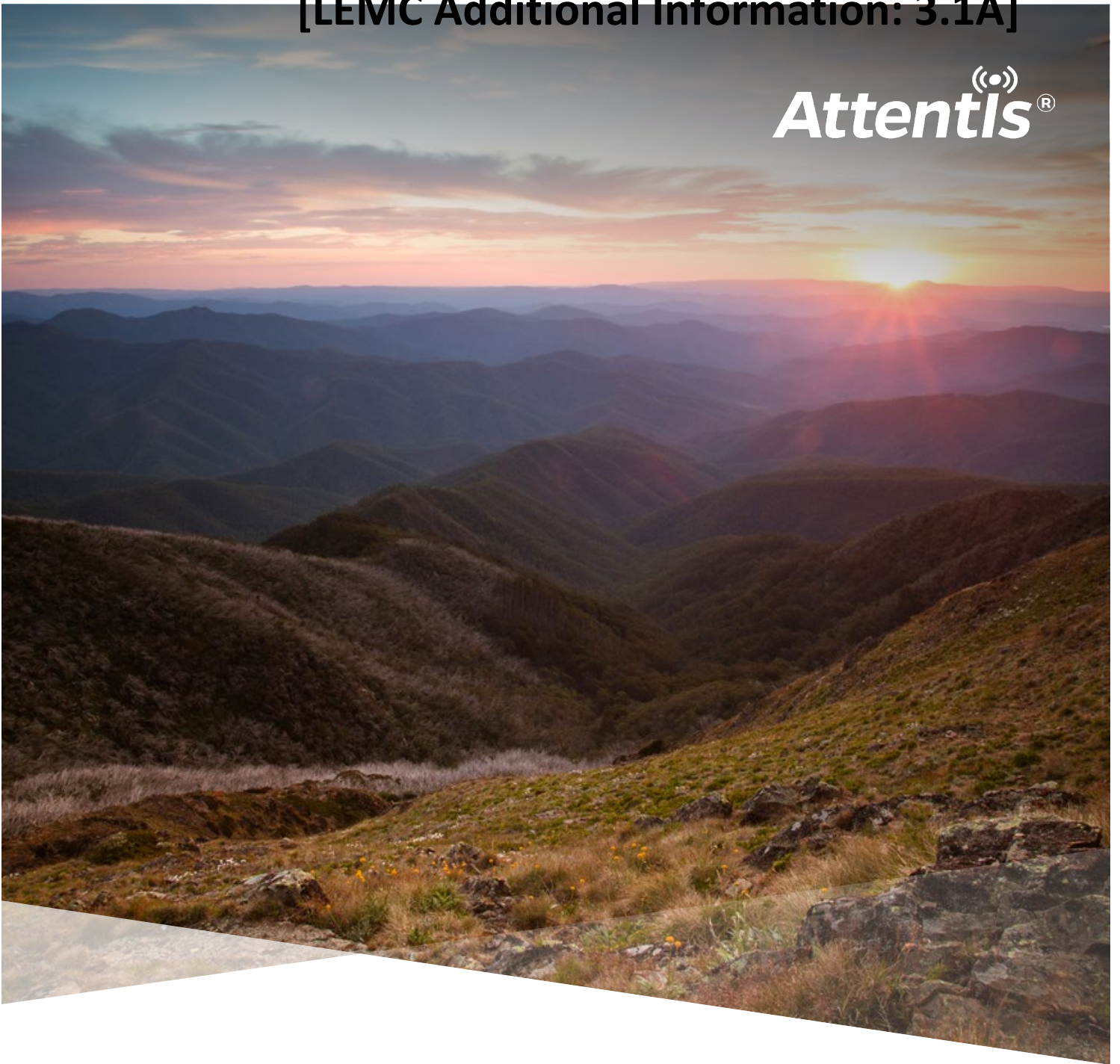
Attentis® Technology has invested years of research and development, testing our networks in extreme conditions to ensure reliability.

Attentis® intelligent networks transform life through improved human understanding of, interaction with and response to, the environment we live in.

This document and all its contents (texts, pictures, graphics, images, icons, technology, software, as well as its graphic designs, etc.) are copyrighted by and/or the property of Attentis® Pty Ltd (ABN: 35 150 420 956). Attentis® is a registered brand of Attentis® Pty Ltd, a fully Australian owned and operated Australian business established in 2009. All rights reserved.

Any redistribution or reproduction of part or all of the contents in any form is prohibited. You may not, except with our express written permission, distribute or commercially exploit the content. Nor may you transmit it or store it in any other website or other form of electronic retrieval system.

© Attentis® 2022




## Latrobe Valley Information Network LVIN.org

An award-winning intelligent live sensor network measuring all environmental elements, delivering early detection, proactive disaster mitigation, public health and safety, critical infrastructure protection, industry visibility, resource protection and community resilience.

July 2021

**STRICTLY COMMERCIAL IN CONFIDENCE**

The enclosed contents can only be disclosed to a third party with the express written approval of Attentis<sup>®</sup> Pty Ltd.



**“Access to real-time information on this scale will assist to build community resilience and confidence, and lead to an informed understanding during events that impact lives throughout the region.”**

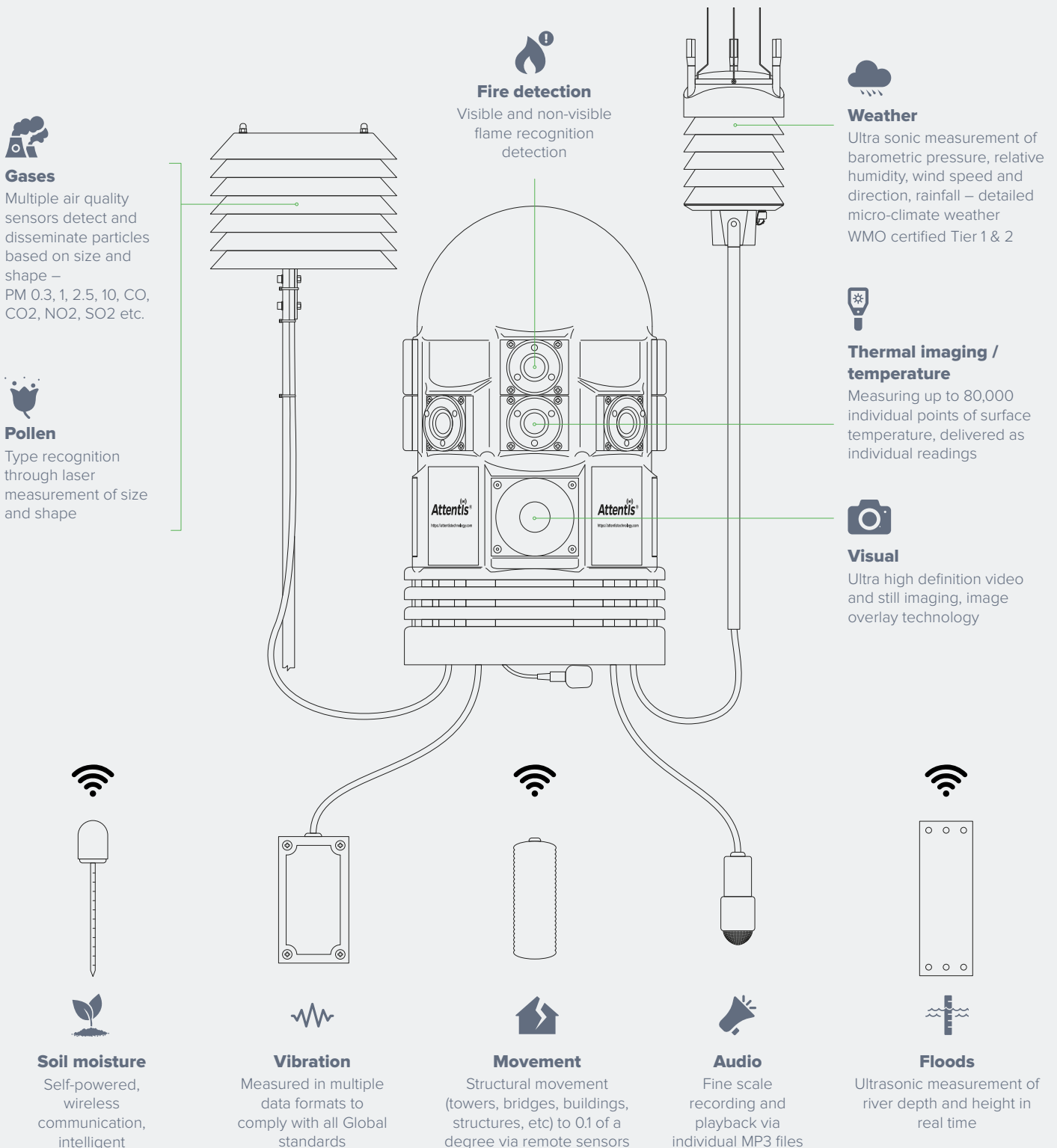
**“Expanding this network will bring greater benefits to all communities and agencies increases the level and breadth of real-time information available.”**

Lance King AFSM

Latrobe City Council - Emergency Management

## Intelligent, integrated, intuitive sensors 44 locations, 1,470 sq klms - real time information

The Latrobe Valley Information Network combines 44 intelligent patented sensors into a high speed, continuous information streaming service for emergency services, agencies, businesses and communities to maintain awareness of live conditions, events and impacts as they unfold - the LVIN.org



# [LEMC Additional Information: 3.1A]



## The Latrobe Valley Information Network powered by Attentis®

In 2019, Attentis® constructed the Latrobe Valley Information Network (LVIN.org): 44 key locations featuring our patented, self-powered Attentis® R-series sensors, integrated to form an intelligent network that continuously streams real-time environmental information coupled with unique detection capabilities.

Funded jointly by the Australia Federal Government and Attentis®, the LVIN was constructed to demonstrate the ability of this Australian developed technology to address community, industry, agency and local government need for real-time, integrated, intelligent information throughout the region.

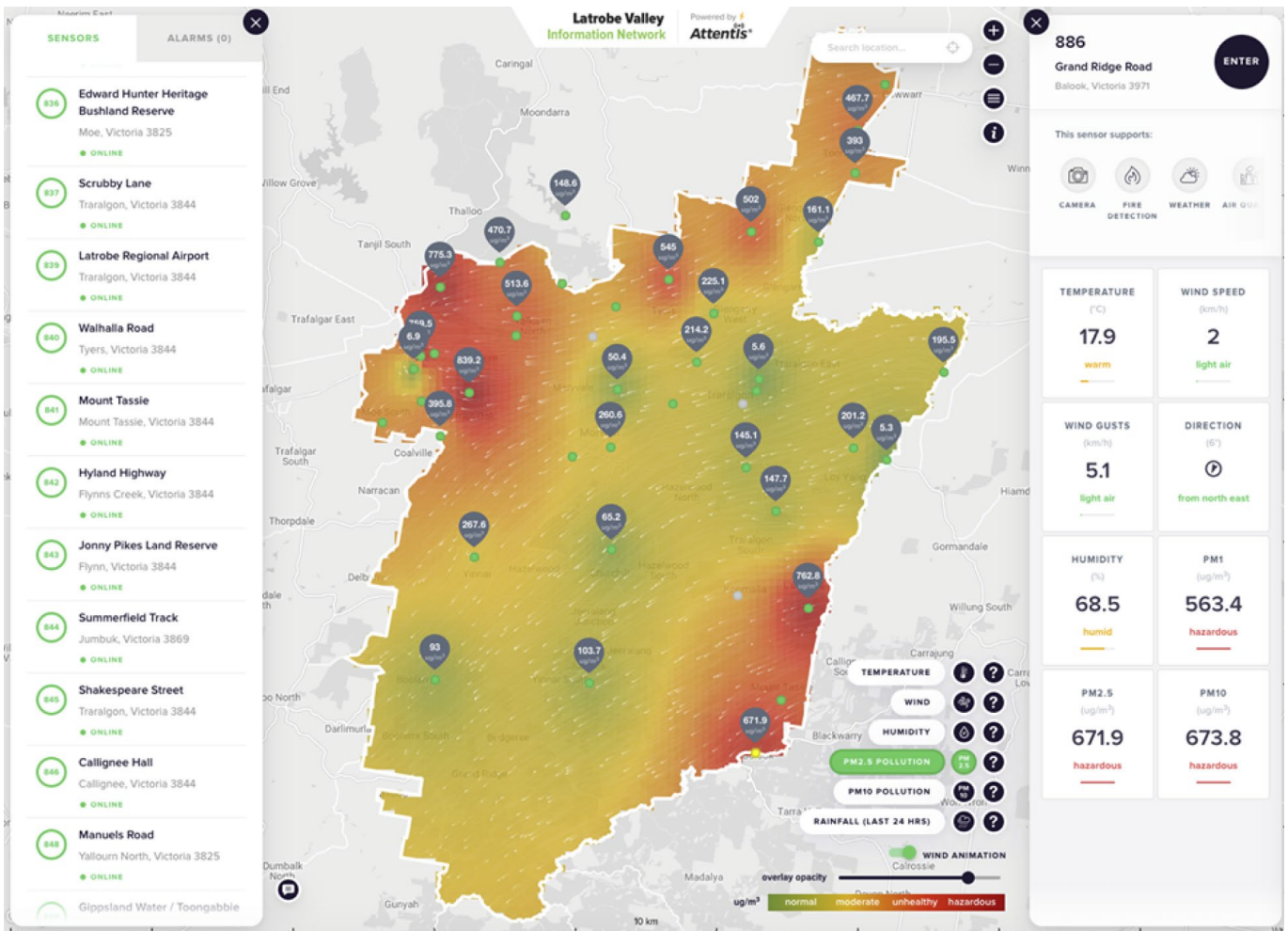
The Latrobe Valley region is home to large scale power generation and distribution, plantations, reservoirs, national parks, coal mines, paper and timber mills and a wide variety of agriculture and farming. The area is also a high fire and flood risk region with previous air quality impacts from several large scale bushfires and a mine fire.

**“We are excited (about the LVIN) because it actually gives the normal person on the street the ability to see what is happening, live.”**

**Wendy Farmer – President, Voices of the Valley**

The LVIN was designed to return confidence to the community and local industry through the construction of the world's first integrated real-time environmental monitoring and early detection and notification network.

Today, the LVIN is a live regional support system providing early detection of critical events (fire ignition, floods, contamination, airborne pathogens), live situational awareness and continuous real-time information to support public health and safety, protect resources and strengthen community resilience through access to timely, reliable information. Access to live and historic information enables local industry and businesses to assess trends, make informed decisions, engage mitigation actions, improve productivity and output contributing to local GDP and employment growth.





# [LEMC Additional Information: 3.1A]

## The new staple for the region

The LVIN has delivered operational improvements for local agriculture, power generation, water utilities, forestry, health services and emergency management, employed local contractors and businesses during construction and restored public confidence in the wake of the Hazelwood mine fire.

This network has become a staple for local industries. Snowy Mountain Hydro, RTL Mining, Thiess, government agencies (CFA, VICSES, VicRoads, Ambulance Vic, DHHS), utilities (AGL, United Energy, AusNet Services, AEMO), local government (Latrobe City Council, Baw Baw Shire) and thousands of local and neighbouring residents, accessing this data on a daily basis.

The network is used for air quality monitoring, localised weather, prediction, mitigation, detection and remote viewing

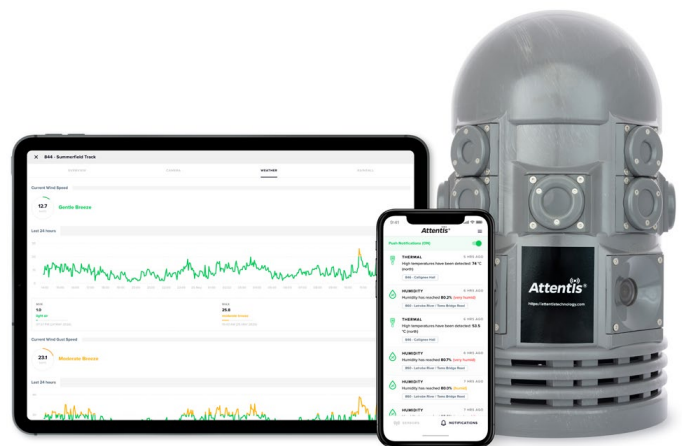
across the region; described by the CFA as invaluable during the Yinnar bushfires in Gippsland.

During the East Gippsland fires over 11,000 daily public users used the LVIN to understand smoke concentration levels throughout the region to make travel route decisions to reduce exposure. Ambulance Victoria also used the site for smoke concentration levels in towns to gain an understanding of the possible future patient numbers attending hospital with respiratory issues and also sent out public warnings.

The Latrobe Valley Information Network is a valuable resource for the region. It provides unparalleled access to a wide variety of live information to aid informed decisions that reduce impact. Real-time community confidence and resilience.



In 2019, Attentis® networks were recognised as the most technologically advanced data transmission networks in Australia, receiving the 2019 Australian Smart Cities Award - Regional, the Best Government IoT Project 2019 in the Australian IoT Awards as well the Best Overall IoT Project for the Latrobe Valley Information Network.



## Nationally recognised as the technology to support every community

The LVIN featured strongly in the New South Wales Independent Bushfire Inquiry into the 2019 / 2020 fires, stating:

*“For fire particularly, the LVIN sensors can monitor weather conditions leading into the fire season, then detect fire ignition, location, temperature and movement. Multiple fires can be viewed simultaneously so that active conditions affecting fire growth and movement can be better understood.”*

*“Installations such as this in high-fire risk areas of NSW, especially near towns and cities, would be an important, relatively cheap and relatively quick development.”*

The LVIN formed the basis for recommendations 4, 34 & 35.

During the 2019 Gippsland fires the CFA accessed LVIN daily, leading to the following quotation from Glenn Pröbstl, Operations Manager, Specialist Response, Fire & Emergency Management, CFA Headquarters:

***“Firstly congratulations to the Latrobe City Council for supporting a network of atmospheric monitoring stations throughout the council footprint. I recently had the opportunity to utilise this service during a recent fire in Gippsland. The ability to monitor weather, for fire operations and pollution for firefighter and community health was a huge advantage over previous campaigns. The advantage of real time information cannot be over emphasised and this was of great benefit to the management of these fires”.***

## Royal Commission recommendations

Attentis® was subpoenaed to provide technology expertise to the Royal Commission into National Natural Disaster Arrangements presenting the benefits of wide-scale real-time sensor networks to deliver coordinated effective response and secondary communication support for communities.

The technology provides the platform for proactive disaster mitigation, public safety, critical infrastructure protection, agricultural yield improvement and community resilience. It is a key technology for all high risk fire and flood affected regions.

### The Royal Commission into National Natural Disasters stated:

“23.48 Australian, state and territory governments should take steps to facilitate **engagement with the private sector to maximise utilisation of ideas and technologies**.

“23.49. “Our hearings highlighted **examples of private sector and individual initiatives which are pursuing innovative research and technology to assist disaster management**. These included:

**Attentis, a company designing and manufacturing patented multi-sensors providing a range of capabilities, including: fire ignition and flame detection; 360° cameras; time lapse and high definition video; air quality sampling; flood detection with water heights; lightning detection; and vibration and structural and ground movement.”**

p496, Final Report: Royal Commission into National Natural Disaster Arrangements, October 2020

## LVIN supports local industry and communities everyday

### Agriculture

The LVIN incorporates a range of continuously streamed real-time information that provides the local farming industry with the ability to better understand local conditions, engage accurate automation and drive productivity and yield through awareness, prediction and trends. Continuous fine-scale measurement of micro-climate weather, air quality and composition, rainfall, soil moisture, fog, frost and dew from 44 locations throughout the region delivers this ability.

Farmers can make precise informed decisions about crop investment, type, automation, forecasts and risk mitigation.

Further capabilities including the integration of thermal imaging, early detection of airborne, waterborne and soil contaminations to elicit immediate response to reduce impacts.

The LVIN introduces the ability to incorporate inexpensive automation facilitation for all farms, regardless of size, utilising the network to determine ideal conditions to operate.

The network also allows individual farms to add thermal imaging to monitor cattle health and animal tagging to actively track livestock. All information is accessible through the LVIN network.

The LVIN provides the basis for improved information and automation, reducing farm engagement time, increasing efficiency and production, and allowing increased family time for improved mental health.

### Viticulture

Attentis® actively worked with the University of Adelaide and E.J Gallo in California, to provide a greater understanding of how smoke taint can impact wine quality. A solution was also developed incorporating smoke detection and automated misting to eliminate smoke absorption.

Micro-climate weather, mildew and frost detection, continuous soil moisture measurement, soil nutrients maintenance and automated mitigation systems are all features contained within the LVIN capability, all designed to protect grape health and support consistent yield objectives of local viticulture.

### Resource protection

The LVIN has sensors located at key resources including reservoirs, rivers and streams detailing water heights and movement. Live monitoring provides instant notification around potential flooding, ground movement, dam wall integrity and trespass. Attentis® has sensors throughout timber plantations to detect fire ignition and protect timber resources for the local timber industry.



## Community health

A publicly accessible mobile App developed by Attentis® connects the Latrobe Valley community to the local environment 24-hours per day, providing information around air quality, micro-climate weather, flood and fire warnings and local community information.

The App also serves as a secondary communication capability during large scale events to ensure complete situational awareness of the event as it unfolds. Local government agencies and emergency services can send messages directly to local residents to inform them of an event and notifications advising of possible impacts, evacuation routes and how to limit exposure.

This App is particularly valuable for asthmatic individuals and those who experience respiratory ailments by providing a mobile platform for early warning of airborne pollutants that details concentration levels, timeframes and safe routes to avoid exposure.

The App offers a vast range of alerts and notifications that are customisable for individual users. The alerts are also available on the Attentis® website.



## Critical infrastructure

Critical communication infrastructure located in the Latrobe Valley is monitored by Attentis® using thermal and visual imaging, vibration, ground and tower movement and noise monitoring. Protection of communication towers is key to maintaining communications throughout communities and regions during catastrophic events. The LVIN also provides a secondary communication network for emergency communications when cellular and internet communication is impacted.



## Unmanned fire detection and notification

The Latrobe Valley is a high fire and flood risk location. The region hosts large scale plantations, coal mines, power generation and national parks, increasing the risk of large scale fires. Fire ignition at these remote locations can occur at anytime, day or night, from a range of sources. If undetected, ignitions coupled with high winds and dry conditions can soon create fires that are difficult and sometimes impossible to contain. Early detection and rapid response are key elements to combat bushfire in these high risk locations. The LVIN features strategically located sensor towers in all high fire risk locations; plantation access roads, refuse sites, coal mine plateaus, rivers, reservoirs, national parks, communication platforms and key information gathering sites.

The Attentis® LVIN network delivers 24-hour unmanned detection of fire ignition using our intelligent patented sensors that incorporate 360° real-time thermal imaging, visual imaging, flame detection, noise and environmental changes to detect fire starts, re-ignitions, hot spots and changes in conditions that lead to fire ignitions. Through real-time awareness, multiple detection capabilities and intelligent processing, our sensors provide the most effective detection capabilities available, with no reliance on a single method.



## Emergency services

The LVIN is a staple for local emergency services, providing unparalleled level of real-time information and live situational awareness and safety. The LVIN network map details fire location, current conditions, fire movement and personnel location, delivering crucial fire management information.

Live intelligence to inform, improve response, reduce impact and provide better outcomes.

Attentis® technology delivers an invaluable tool to enable first responders to:

- rapidly respond with a clear understanding of the fire, flood or potentially catastrophic event as it unfolds;
- strategically position ground and aerial resources at the most effective combat points;
- maintain real-time awareness of changes in wind speed and direction to remain a step ahead of the event;
- reduce the risk of burn over and health impacts to first responders by continuous tracking of personnel, conditions, the fire front and key assets;
- measure air composition for smoke, particulates and gases to reduce health impact on first responders and the general public.



## LVIN: delivering the objective

### The Yinnar fires - re-ignition incident

During the Yinnar fires in Gippsland, Victoria on March 2019, the sensor located at HVP Plantations in Jumbuk detected a fire re-ignition after the main fire was extinguished.

A slow increase in ground temperature was detected and series of thermal notifications (far left) displaying the increasing temperature at the ignition source was send to first responders to return to the location. The investigation revealed an early-stage re-ignition that was then properly extinguished.

The value of this technology is demonstrated in this capability. If you review the visual images that accompany the thermal images, it clearly reveals the low lying smoke that is not visible above a metre from the ground, making it impossible to detect using solely camera and visual methods. The use of multiple intelligent methods to detect are a feature of our patented technology and proven in real world applications.

### Remote ignition detection and response

Site 866 is located along Rifle Range Road in Glengarry North, a dirt access road adjacent to pine plantations owned by Hancock Victoria Plantations (HVP). This particular site was selected due to its propensity as a high fire risk location, in part due to the plantation, the roads use for stolen car fires, its remote accessibility and its frequency of trespassers.

This site features weather, air quality, rainfall, movement and thermal and visual imaging.

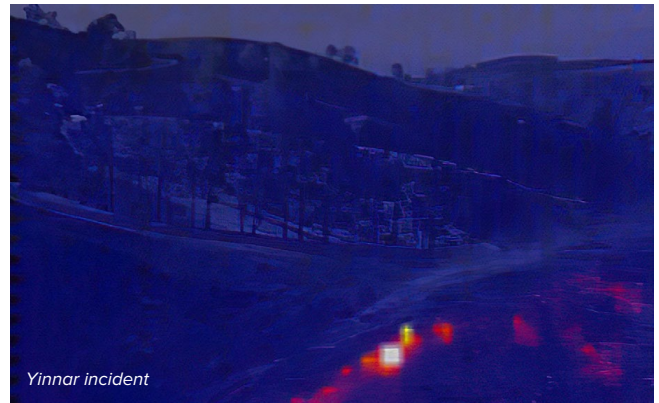
At 5.33pm on Friday 23rd October, several alert notifications were received detailing high readings of  $PM_{10}$  and a higher than normal readings of  $PM_{2.5}$ .

A key feature of Attentis® networks is the ability to rapidly investigate any alert through visual confirmation via the Attentis® interface and App. The investigation confirmed light thermal increases and visual signs of light smoke accentuated by the ability to time-lapse the location.

The alert was also received by Hancock Victoria Plantations and the local emergency services first responder team, whom rapidly investigated the cause. The investigation revealed a property adjacent to the plantation was undertaking small fuel reduction burning (see image) of a fire approximately 2x2 metres (6 foot x 6 foot). The fire was extinguished.

This event had the hallmarks of a larger scale event. Friday evening, increasing winds, dry conditions and an adjacent fuel load. If this fire failed to be extinguished properly or a re-ignition occurred, embers could have blown into the plantation causing a fire that gains strength throughout the night to reveal an intense fire in the morning that is difficult to extinguish and threatens the local community.

This immediate detection, notification and investigation capability of the LVIN network reveals the value of the technology to provide resilience for the region.



Thermal



Visual



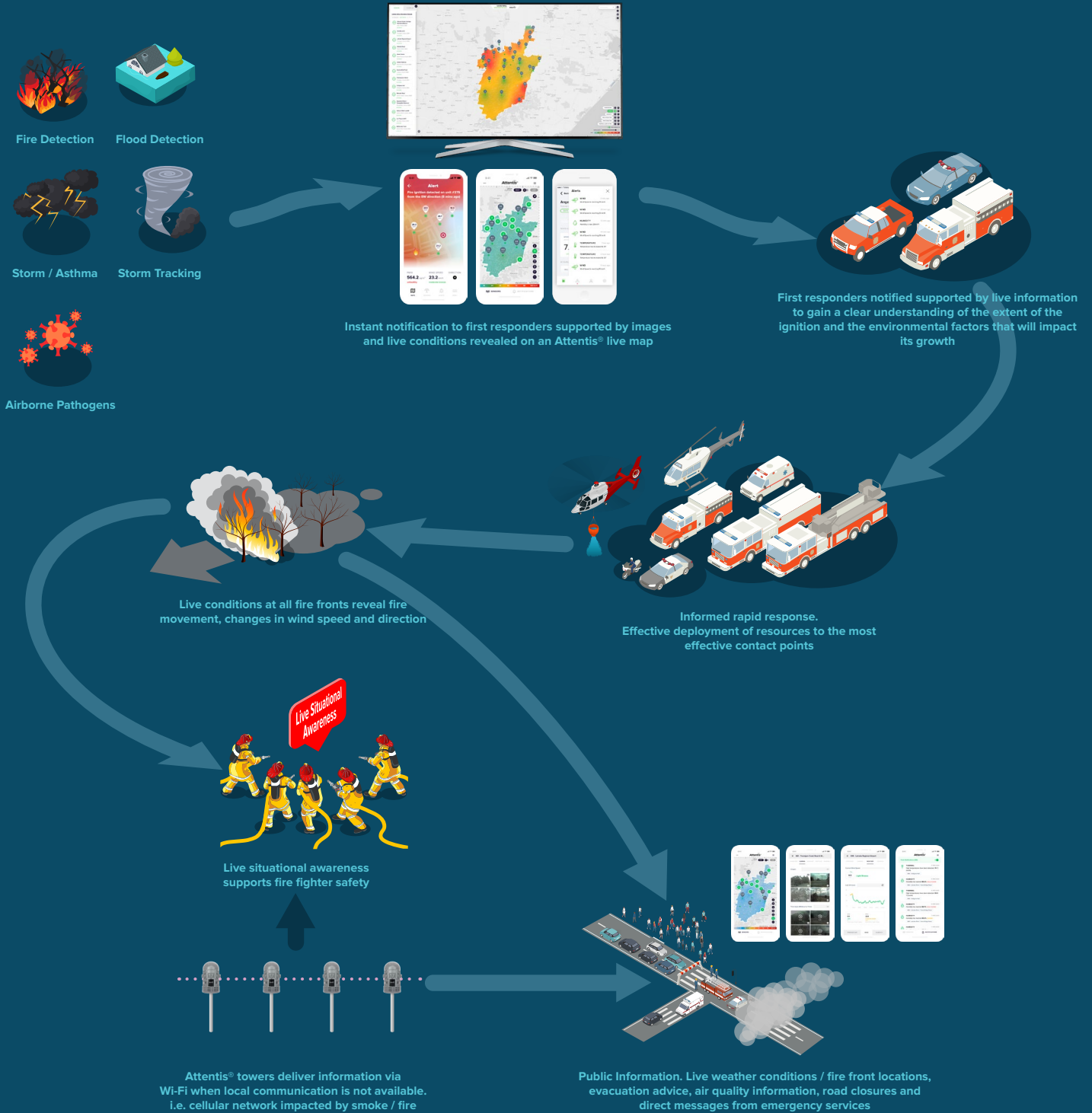
Camera view



On-site visual

How Attentis® technology delivers a critical piece for fire, flood and natural disaster management

Early detection, rapid response, and live situational awareness saves lives



**Attentis® combines early detection, live information, tracking, notification and communication systems in a single high speed network.**

The Attentis® Latrobe Valley Information Network (LVIN) demonstrated the capabilities of our technology to provide early warning of fire ignition and floods. Our technology will be key in the future to support resilient informed communities in national natural disaster prone areas. Attentis® delivers community confidence everyday.



## **Attentis® (Head Office and Manufacturing)**

+61 3 6144 6060

info@attentistechnology.com

3 Kembla Street, Cheltenham

Victoria, Australia 3192

## **Attentis® (United States)**

30941 Agoura Road, Suite 310

Westlake Village, CA 91362, USA

[www.attentistechnology.com](http://www.attentistechnology.com)

Creating intelligent sensor networks is a major step in understanding environmental factors that impact our daily lives.

Attentis® Technology has invested years of research and development, testing our networks in extreme conditions to ensure reliability.

Attentis® intelligent networks transform life through improved human understanding of, interaction with and response to, the environment we live in.

This document and all its contents (texts, pictures, graphics, images, icons, technology, software, as well as its graphic designs, etc.) are copyrighted by and/or the property of Attentis® Pty Ltd (ABN: 35 150 420 956). Attentis® is a registered brand of Attentis® Pty Ltd, a fully Australian owned and operated Australian business established in 2009. All rights reserved.

Any redistribution or reproduction of part or all of the contents in any form is prohibited. You may not, except with our express written permission, distribute or commercially exploit the content. Nor may you transmit it or store it in any other website or other form of electronic retrieval system.

© Attentis® 2021



# [LEMC Additional Information: 3.1B]



Government of Western Australia  
Department of Fire & Emergency Services  
Operations



## SAFETY CIRCULAR 02/2022

File: D24302

May 2022

### POTENTIAL EXPOSURE TO CHROMATED COPPER ARSENATE (CCA)

---

#### Key Message

Potential Exposure to Chromated Copper Arsenate (CCA), Occupational Physician information sheet released.

#### What happened?

During the Bridgetown Fire (Inc 559961) from 5 to 8 February 2022, there was potential for personnel working within the Timber Treaters Mill to be exposed to CCA resulting from the burning of multiple piles of treated timber leaving contaminated ash.

DFES engaged contractors to stabilise the piles of CCA ash to prevent them from being blown in and around the Hester area. This was achieved by spraying a bonding agent over the ash piles, easily identified by its tinted colour.

Following reports of potential exposure, HSS engaged Occupational Physician Dr Andrew Thomson from OSHGroup to review the known data, determine if health monitoring was required and provide advice on potential risks.

#### What do I need to do?

Personnel who believe they may have been exposed to CCA and have concerns should review the information provided by Dr Thomson which can be found below.

Task Force leaders and CESMs are requested to ensure all units (CFRS, VFRS, VFES, LG BFB and Farmer Response) and local government representatives are aware of the attached information.

#### Further information

For additional information regarding this, contact [hss@dfes.wa.gov.au](mailto:hss@dfes.wa.gov.au)

Whilst medical opinion does not indicate the need for testing or further investigation, if individuals have concerns about the potential exposure, they should contact **OSHGroup on 08 6298 8400** for consultation with an Occupational Physician.

**CRAIG WATERS AFSM**  
**DEPUTY COMMISSIONER OPERATIONS**

Target Audience:				
A	B	C	D	Vol
O.I.C. is to communicate content to all relevant personnel under their command, discuss implications, and sign appropriate box above. Once completed Circulars shall be filed on station and forwarded to Information Resources at the end of each financial year.				
OC-02-22	Issue Date:	Valid Until:	Contact:	Health and Safety Services
Page 1 of 3	May 2022	April 2023	<a href="mailto:hss@dfes.wa.gov.au">hss@dfes.wa.gov.au</a>	

# [IFEMC Additional Information: 3.1B]



Government of Western Australia  
Department of Fire & Emergency Services  
Operations



ABN: 56 124 944574

**HEAD OFFICE**  
36 Parliament Place, West Perth, WA, 6005  
PO Box 337 Wembley, WA 6913  
T: +61 8 6298 8400 | F: +61 8 6298 8499  
reception@oshgroup.com.au  
www.oshgroup.com.au

## Chromated Copper Arsenate (CCA)

CCA treated wood was involved in a recent exposure event during operations in the township of Hester as part of the Brunswick Junction bushfire. Most firefighters attending the area were wearing N95 or greater respiratory protection and briefings were given on management of smoke, ash and concerns. There were two reports of gastric upset which settled but no other symptoms reported that associated with CCA exposure.

Chromated Copper Arsenate (CCA) is a chemical mixture of salts used to preserve wood from rot caused by insects, microbes, and fungi. The use of CCA has been regulated since 2004 due to the slow release of CCA components into the surrounding environment from weathering and leaching. This slow-release overtime increases the level of arsenic, copper and chromate in topsoils and nearby water sources.

Acute exposure to the arsenic component can cause symptoms such as nausea, vomiting, diarrhoea, and abdominal pain. Neurological changes such as numbness and altered consciousness can occur in high doses and with long-term chronic exposure. Chromate and copper exposures at high enough levels generally cause irritation of the skin, eyes, mouth, nose, and respiratory system.

Many available studies have looked at long term chronic exposure to CCA in wood workers and residents in high exposure areas such as in second and third world countries through skin and ingestion. Several studies have looked at chronic inhalation exposure from wood burning fires used for cooking. These studies looked at the neurological changes and risk of cancer from chronic long-term exposure. Very few studies have assessed isolated short-term risk from inhaled smoke and burnt ash of CCA treated wood products.

The components of arsenic, copper and chromate are released during burning and are present in residual burnt ash. Studies have shown that higher temperatures of burning, > 800°C causes higher levels of arsenic release. The fire at Hester is estimated to have reached temperatures of 500°C. Soil and ash sampling of the affected areas showed levels of exposure below the environmental limits. No sampling occurred during the fire and as such a direct correlation of fume exposure is unable to be made.

**SPECIALISTS IN CORPORATE HEALTH AND SAFETY**

Target Audience:				
A	B	C	D	Vol
O.I.C. is to communicate content to all relevant personnel under their command, discuss implications, and sign appropriate box above. Once completed Circulars shall be filed on station and forwarded to Information Resources at the end of each financial year.				
OC-02-22	Issue Date:	Valid Until:	Contact:	Health and Safety Services
Page 2 of 3	May 2022	April 2023	<a href="mailto:hss@dfes.wa.gov.au">hss@dfes.wa.gov.au</a>	

# [LEMC Additional Information: 3.1B]



Government of Western Australia  
Department of Fire & Emergency Services  
Operations



ABN: 56 124 944574

**HEAD OFFICE**

36 Parliament Place, West Perth, WA, 6005  
PO Box 337 Wembley, WA 6913  
T: +61 8 6298 8400 | F: +61 8 6298 8499  
reception@oshgroup.com.au  
www.oshgroup.com.au

CCA exposure can be assessed in blood, urine and hair sampling for those who have ongoing exposure in the workplace or home environments. Blood and urine sampling for chromate, arsenic and copper levels is not effective in assessing levels after 1-2 weeks after an acute exposure because of the rapid metabolism by the body. Hair sampling has shown to have a variable efficacy in assessing those with acute symptomatic poisoning and in chronic exposure. At this stage of the review process, no further testing is indicated.

If anyone is apprehensive about their exposure, OSH Group can assess individuals at a group or case level if there are ongoing concerns.

References

Worksafe WA (2022) *Arsenic (Inorganic) – Health Surveillance*, accessed at <https://www.commerce.wa.gov.au/worksafe/arsenic-inorganic-health-surveillance-guide-medical-practitioners-0>

Niyobuhungiro R V & BLOTTNITZ H V (2013 Investigation of Arsenic Airborne in Particulate Matter around Caterer’s Wood Fires in the Cape Town Region, *Journal of Aerosol and Air Quality Research*, 13:219-224

doi:10.42209/aaqr.2012.06.0148

McMahon C K, Bush P B & Woolson E A. 1986 How much arsenic is released when CCA treated wood is burned? *Forest Products Journal*, Vol.36, No11/12: pg45-50

de Medeiros Domingos D, Scussel R, Canever S, Soares B, Angioletto E, Bernardin A & Pich C. 2022 Toxicity of fly ash effluent from the combustion of (chromated copper arsenate)-treated wood, *Journal of Cleaner Materials*, Volume 3, 2022, 100051, ISSN 2772-3976, doi.org/10.1016/j.clema.2022.100051.

Morais S, Fonseca H, Oliveira SMR, Oliveira H, Gupta VK, Sharma B, de Lourdes Pereira M. Environmental and Health Hazards of Chromated Copper Arsenate-Treated Wood: A Review. *International Journal of Environmental Research and Public Health*, 18(11):5518. doi.org/10.3390/ijerph18115518

Katz S A. 2019 Review: On the Use of Hair Analysis for Assessing Arsenic Intoxication, *Int. J. Environ. Res. Public Health*, 16, 977; doi:10.3390/ijerph16060977

**SPECIALISTS IN CORPORATE HEALTH AND SAFETY**

Target Audience:				
A	B	C	D	Vol
O.I.C. is to communicate content to all relevant personnel under their command, discuss implications, and sign appropriate box above. Once completed Circulars shall be filed on station and forwarded to Information Resources at the end of each financial year.				
OC-02-22	Issue Date:	Valid Until:	Contact:	Health and Safety Services
Page 3 of 3	May 2022	April 2023	<a href="mailto:hss@dfes.wa.gov.au">hss@dfes.wa.gov.au</a>	

