BART Capability Statement

Emerg Solutions Pty Ltd., trading as BART Solutions

Friday, 10 February 2023

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INTRODUCTION

Our Emergency Response software 'BART' (Broadcast Alert Respond Turnout) is renowned across Australia for helping first responders and emergency personnel to turnout faster, communicate better and work safer. The BART system has the ability to help **anticipate risk, limit impact, and decrease turnout and recovery times.**

100% AUSSIE

We are a 100% Australian owned and run software company, with a firm focus on delivering greater efficiencies and improved communication across public safety and emergency response operations.

- 100% Australian software provider
- Trusted by over 90,000 emergency services personnel
- 15 years of experience in the emergency sector
- Customers include: Rio Tinto, BHP, Westgold, Western Power, Northern Star Resources, Newcrest Mining, Evolution Mining, and NSW RFS

LOW-COST, HIGH-VALUE

BART is a low cost, high value system that is revolutionising mining safety, emergency management and response practises across Australia. The system has helped to improve the efficiency and effectiveness of emergency response activities across a range of sectors: Mining, Agriculture, Commercial, Health, Emergency Services, Australian Government.

BART is a mature and proven solution, which incorporates many years of research and development along with over 10 years of operational success.

The system offers a range of benefits to Emergency Response operations, including:

- Connecting response teams across multiple locations
- Ongoing real-time updates
- Free's the radio network up for more critical communications
- Improving compliance and accountability, ensuring all decisions are visible and traceable.
- Ensuring responders are appropriately matched to the vehicles, plant and equipment for which they are suitably trained and experienced
- Maximising mobility by ensuring information is more accessible in the field and on the move, and increase staff and task efficiency making them more proactive and less reactive
- Maximising technology value, leveraging opportunities to reduce cost and maximise efficiency

HIGHLY SECURE

The BART system supports governance through secure access management, policies, security controls, user role-based access, user permissions and user groups, versioning and auditing of artefacts. We are serious about security, and as a result from working with Victoria Police, all staff have undergone federal vetting to level 'NV-1 Level: SECRET'.

CAPABILITY

BART SYSTEM OVERVIEW

The BART system is a cloud-based Software as a Service (SaaS) and has been designed to assist with the daily operations of emergency personnel. BART supports the notification and turnout process for both paid and volunteer end-users and provides a fast and effective means to view and manage their availability prior to, during, and after an incident.

BART has been developed as a multi-platform system to cater for the various user groups and applications of use across the response process. It was designed to be device independent, so that the system can be used effectively via all modern platforms and operating systems.

PLATFORMS

BART Team App

Built for smart devices including smart phones, tablets, and smart watches. The BART Team App contains all key operational functionality, and provides an easily accessed personal tool for all daily operations.

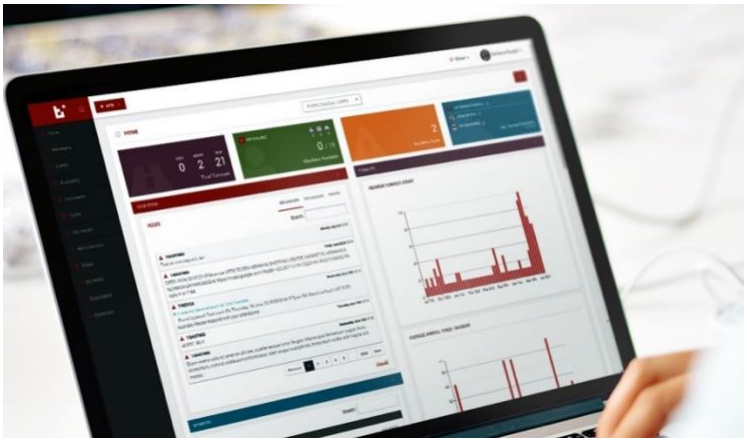
Appliance App

A tailored interface within the BART Team App to cater for responding appliances. The appliance app provides automatic GPS tracking and is accessed via logging into the BART Team App with a specific ‘Appliance’ account.

It’s commonly used on a tablet device that is set within a responding appliance and provides routing to the incident based on current traffic conditions.

Members WebApp

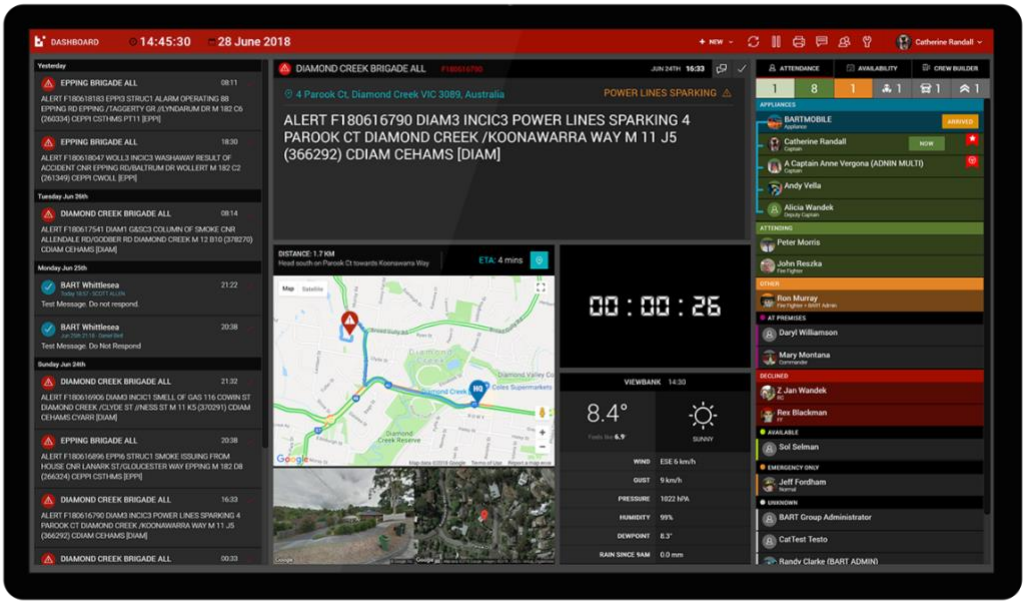
A responsive web-based platform that provides both operational and administrative functionality options. The Members WebApp is commonly used by end-users with higher than standard privileges, and provides a simple interface to administer members, groups, messages, locations, qualifications, permissions, and broadcasts.



Dashboards

Group Dashboard

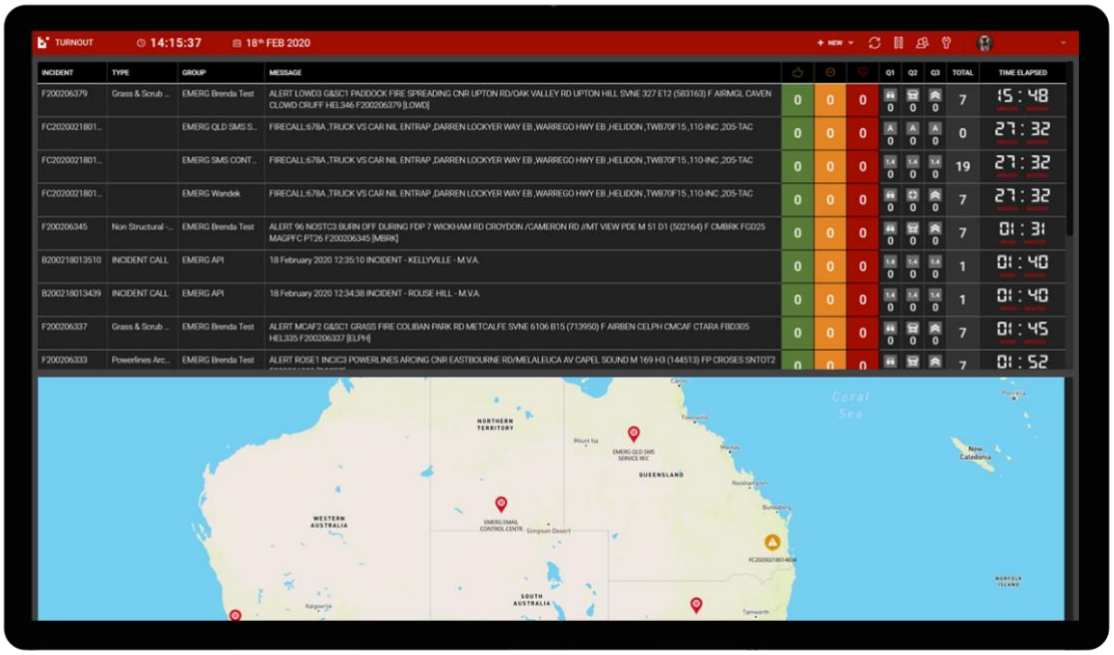
Designed to help manage both brigade and multi-brigade incidents. The Group Dashboard is commonly setup on a large screen within headquarters to maximise visibility for situational awareness. When individuals arrive at the unit or station, they no longer need to look at their smartphones for real-time updates.



Turnout Dashboard

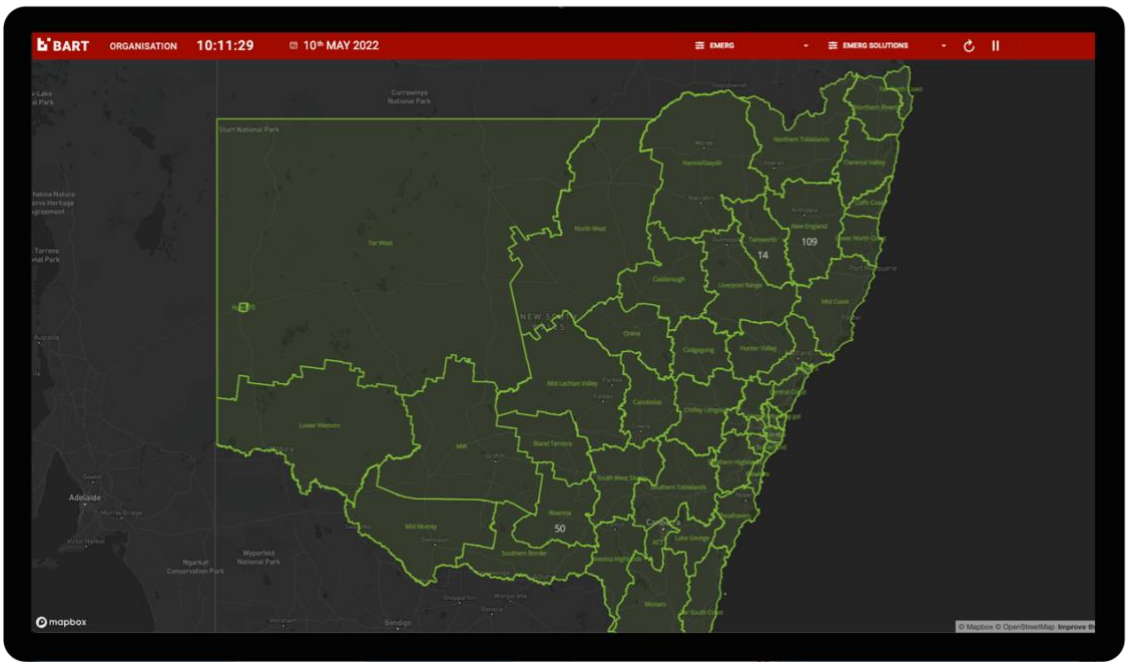
Enables the collection and control of Area, District and Regional level information. The Turnout Dashboard provides a high-level overview of all broadcasts, to assist area, regional and zone level management maintain awareness and control.

This platform has additional warnings built in to ensure managers can notice quickly and react accordingly when turnout requirements are not met.



State Dashboard

Provides a state-wide overview of all member availability across the agency. Map results can be filtered by District or Zone.

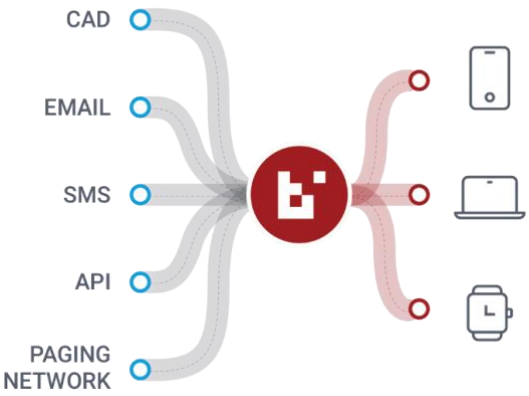


DATA FEEDS

Broadcast Feeds

The incident and event data that feeds into the BART system can come from a range of sources, and may include one or more of the following:

- In-app broadcast creation
- CAD integration
- Pager feed
- SMS
- Email
- API



Information from the various feeds is processed through the system to offer a rich, visual representation of key data, which may include:

- Address, Agency code, Apartment, Alert type
- City, Country, Cross Street, Incident ID
- Latitude & longitude
- Location name, Location type
- Map Info, Incident number, incident Type, incident Description
- Postcode, Description, Number, Problem
- Radio names, Response area, State
- Capcode, Broadcast Tag, Group recipient identifier

Broadcast feeds and their recipients are controlled by 'Broadcast Tags', which can be assigned to one or more end-user, group, district, zone, or agency wide. Each Broadcast Tag can be associated with a specific brigade or unit, location, role, position, permission group, specialty group, or skillset.

User Data

The BART system can also be integrated with external corporate systems to ensure the accuracy of end-user related data. This can be achieved through a direct data connection, or via an automated recurring data import (XML, XLS, CSV).

NOTIFICATIONS

The BART system allows anyone, regardless of device or technical know-how, to receive and respond to real-time notifications for critical ongoing communication. Notifications are key to real-time situational awareness and to ensure that no vital information is missed.

One or more notification methods can be set for each person, and for each broadcast tag.

Push Notifications

The most common notification method is via 'Push Notification', which is a native feature of smart devices like phones and tablets. These notifications appear on the end-user's device lock screen, even when the BART app isn't open. They're generally accompanied by an alert tone, which can be selected from the list of available tones or disabled depending on each notification type, and an end-user's preferences.

Push Notifications require an internet connection via WiFi or mobile data.

Tapping on the Push Notification will direct the member to the BART App to register their response.

SMS

Broadcast notifications can also be received and responded to via an SMS message, which caters for those who have a non-smart phone or who may be out of internet range. Some of our members have elected to receive SMS messages in addition to other notification methods to ensure they don't miss an important notification.

IVR

IVR stands for 'Interactive Voice Recognition' and gives members the option of receiving and responding to broadcast notifications via a phone call (landline or mobile). When a new notification comes through a member's phone will ring, where they will hear an automated voice recording of the message contents. Members have the ability to register their attendance verbally, or by pressing the assigned number.

Full instructions are provided in the IVR message, where the end-user may also choose to provide an ETA to headquarters.

Email

Broadcast notifications can also be received and responded to via email, where the message will appear in a member's elected inbox. All message contents are included in the body of the email, where a reply can be sent to indicate the member's turnout intention.

RESPONSE

A core feature of the BART system is providing a quick and simple way for end-users to respond in real-time to an incident or event.

Members can respond with their intention of turning out:

- Attending
- Not Attending
- Other

Attendance Mapping

When a member has responded to a broadcast message with 'Attending', their current location is recorded in the system to help assist with planning and management of the event.

If a member has 'Track me on Attending' enabled, their location will be visible on the map as they make their way to either the station or direct to the incident.

Estimated Time of Arrival

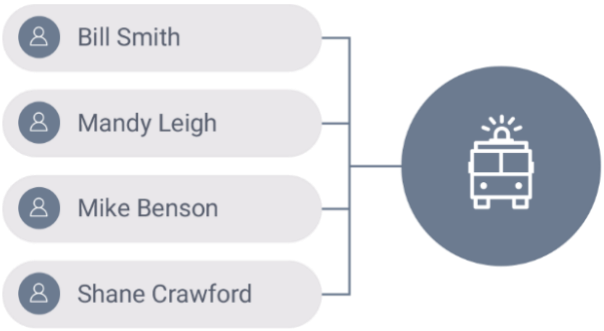
The ETA of each end-user is calculated when they indicate they're 'Attending', based on their current location and distance to headquarters whilst taking into account current traffic conditions. A response can be formed prior to the arrival of end-users at headquarters, which takes into account skills and abilities along with arrival time.

Crew Builder

Once end-users begin responding to an event or incident with 'Attending', Duty Officers or Captains can start assigning members to appliances using the 'Crew Builder' function which is available on the Team smartphone app, Group Dashboard, and the Members WebApp platforms.

Members can also be assigned specific roles in the crew, like 'Driver' and 'Crew Leader'.

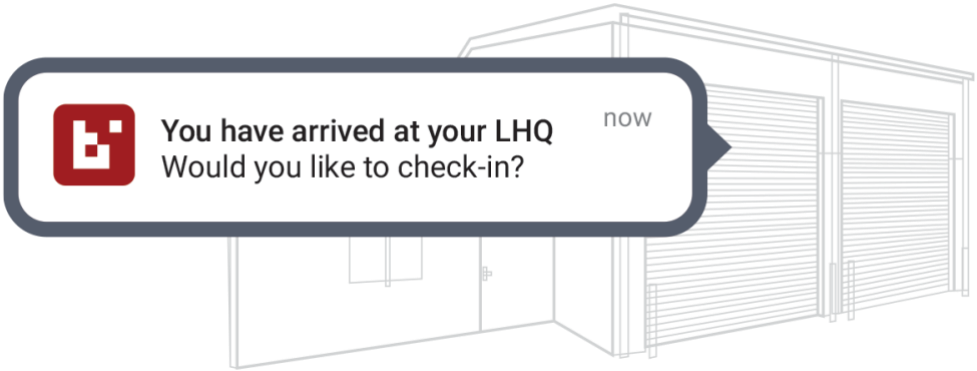
All appliances and crew members assigned are included in the end of incident report, which is automatically generated and emailed out upon completion.



Check-in

When enabled, end-users will be prompted to check into headquarters when they enter within the set geo-fenced radius for their group. Once checked in, a members availability status is automatically changed to 'At Premises'.

The 'check-in' function is currently an option for end-users, which can be enabled or disabled within each member's profile settings.



When leaving the set radius boundaries, end-users will be prompted to 'check-out' of headquarters. All check-in information is available in a report format, which can be used to manage members and their operational capability.

Responding Appliances

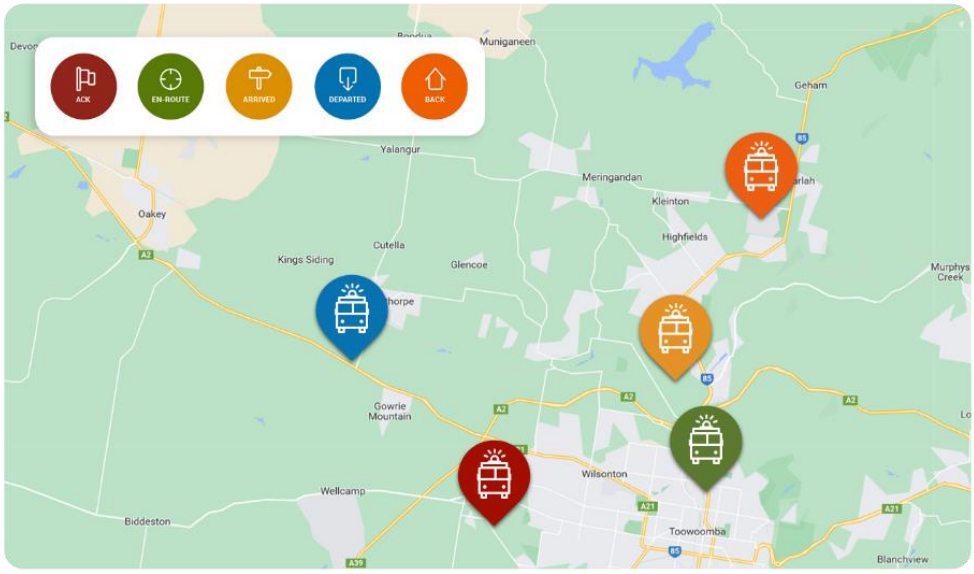
Once a crew has been assigned to an appliance and leaves the unit, brigade, or headquarters, the appliance version of the BART Team app can be utilised. Commonly used in combination with a fixed tablet device, the appliance app provides ongoing real-time turnout progress data.

The appliance version of the BART Team App includes a range of status buttons specifically designed to record and share information vital to the turnout process:

- Acknowledge (this status activates the tracking of the appliance – appliances will be visible to other groups within a 100km radius)
- On the way
- Arrived
- Returning
- Back at headquarters

Mapping

Appliances are tracked as soon as they are 'En-route' to an incident. The location of the appliance is displayed on a map, along with an ETA to the incident.



The appliance app also provides routing to the incident based on the fastest, most efficient route including traffic conditions. The map view can be toggled between standard, hybrid, satellite, or terrain views.

Key mapping points of interest can also be viewed in the appliance app, including water points, communication towers, helipads, hydrants, defibrillators, and control points.

Incident Report

All key times and locations of the appliance are logged and included in the standard incident report. Reports are automatically generated once a broadcast has been marked as 'Completed' by a member with the adequate permissions.

The incident report displays the time and location of each step of the turnout process, including the time and location an appliance:

- Has been 'Assigned'
- Is 'En-Route'
- Has 'Arrived' at the incident
- Is 'Returning' from an incident
- Has 'Returned' from an incident

On-Scene Communication

The BART Team app can be used to record and share on-scene information in real-time, which may include:

- Photos and images
- Discussion messages
- Current or specified location
- Incident logs

The on-scene communication capabilities can be further enhanced to cater for a full 'scene risk assessment', which will allow end-users to record:

- Hazard
- Likelihood
- Consequence
- Mitigations
- Residual likelihood and consequence

EVENTS CALENDAR

The Events module allows superusers to create and manage events within different categories, like training, community engagement, meetings, maintenance, and fund raising. End-users can set a start and end time, location, number of members required and create reminders for their members.

End-users can indicate their ability to attend each event like with regular broadcasts, and once accepted they can add the event to their own personal calendars.

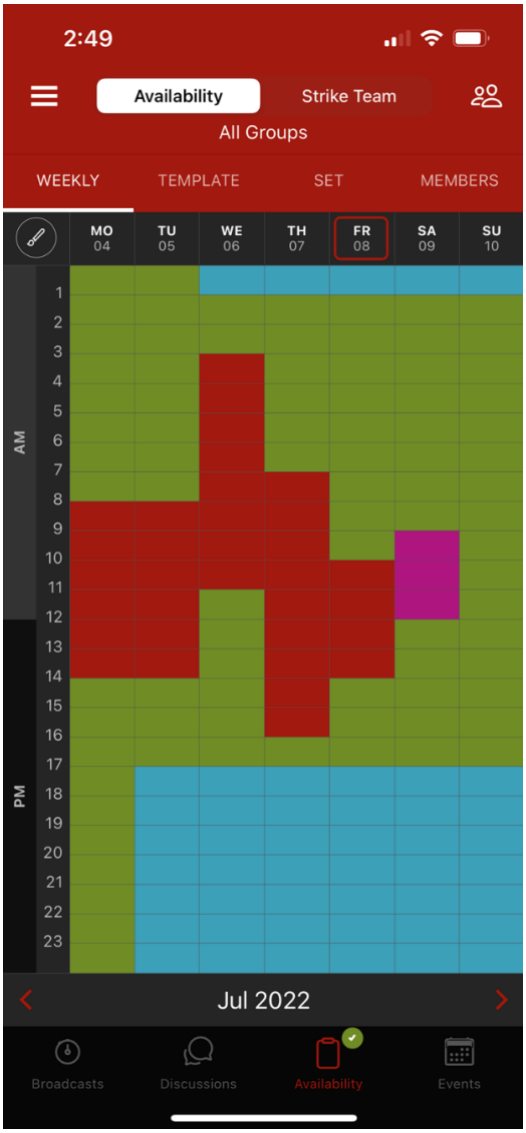
AVAILABILITY

The BART system makes it easy for end-users to set their current and future availability to attend incidents and events.

Members can select from a range of availability statuses to advise the days and times they are able to respond to a callout:

- **Available** - member is available to attend incidents as the first point of call (Now)
- **Not-Available** - member is unable to attend incidents
- **At-Premises** - member is located at the station and is able to attend incidents
- **Delayed** - member is available to attend incidents but may be delayed (Later)
- **Emergency Only** - member is available to attend incidents only when required (Only When Required)

End-users are able to view the availability of all other members in their group, to assist with forward planning by providing transparency throughout the group.



Templates

Templates can be setup by end-users to make future availability scheduling easy and more efficient.

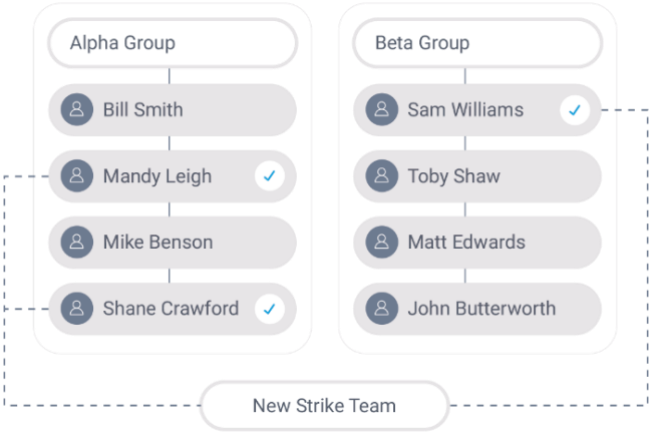
Multiple Groups

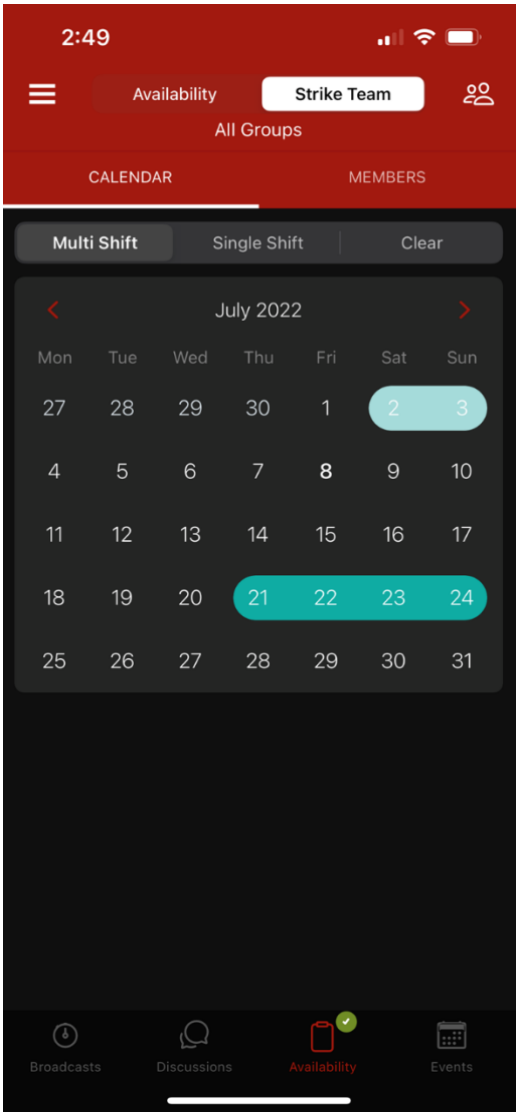
If an end-user belongs to multiple groups, they have the ability to set different availability statuses for each individual group.

Strike Teams

Strike Teams can be made up of members from one or more groups and be assigned with pre-rostered shifts. A date, time, and shift type can be added, along with the ability to assign specific incidents or events.

Strike teams may be setup for those with a specific skill set, specialist or supporting groups, or roles within your Organisation.

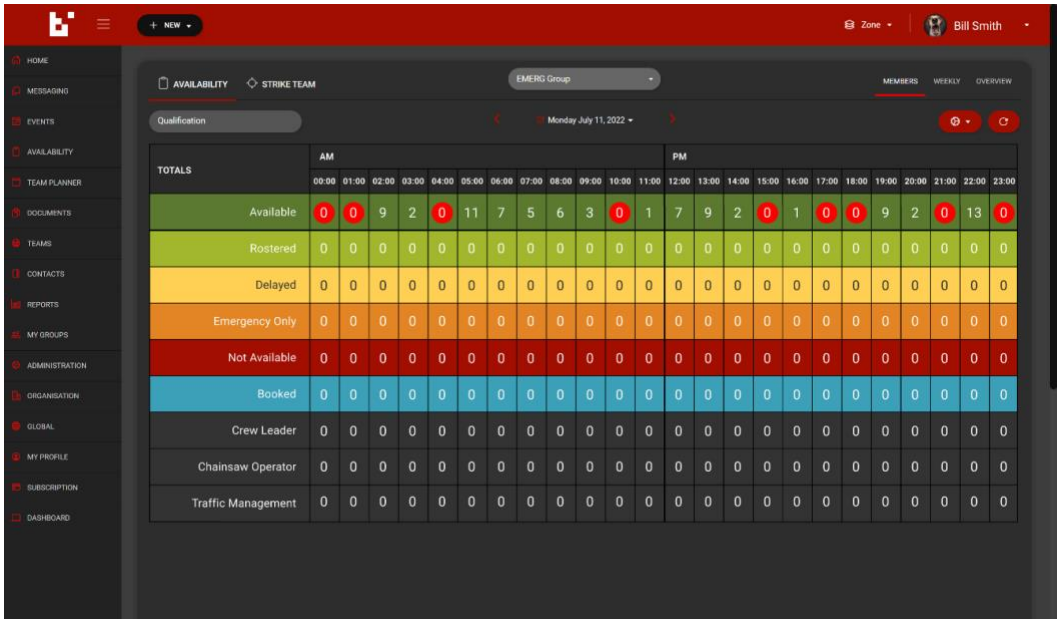




End-user availability for Strike Teams can be set in addition to their standard turnout availability, for both single and multi-shift status types.

Operational Overview

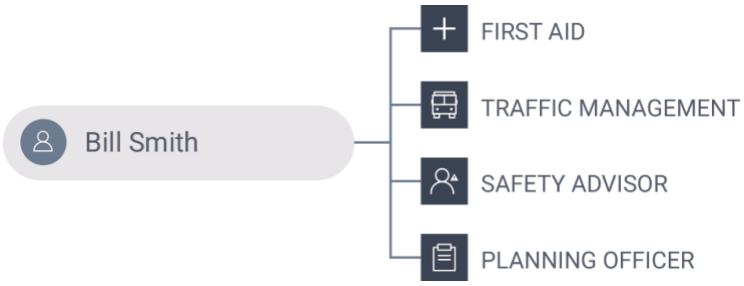
Resource and Duty Officers will be provided with a comprehensive overview of all end-user future Availability, enabling them to make operational decisions based on ability to turnout, skills, and qualifications.



The Availability Overview has been included as part of the 'Members Area' to allow headquarters staff to view the availability of their group(s) and members in a brigade, unit, or regional level and across the Organisation.

Skills and Qualifications

The qualifications of each end-user are clearly displayed across the BART platforms to allow Duty Officers to connect shifts, events, and incidents with the most qualified members.



The Availability webapp interface displays the total number of available members that hold the top 'Critical Qualifications', which are set on a per-group basis, ie. Crew Leader, Driver and Breathing Apparatus. Critical Qualifications will be setup according to your own business rules and requirements.

Minimum Thresholds

We have recently expanded on our availability module to implement minimum crew thresholds, which includes:

- Minimum number of required members
- Minimum number of members with a critical qualification

This new development includes a weekly email that's sent out to predetermined staff members or brigade administrators, indicating if availability counts have been met or not. This will allow Resource and Duty Officers to take pre-emptive action if minimum thresholds haven't been met.

Crew members will also have the ability to view if minimum operational numbers have been met or not via the BART Team smartphone app.

Filtering

Duty Officers and headquarters staff can filter end-users based on availability type, and by one or more specific qualifications to make it easier to form a qualified response. For headquarters staff and higher management, Availability statuses may be filtered by Group, District, or Zone.

ROSTERING

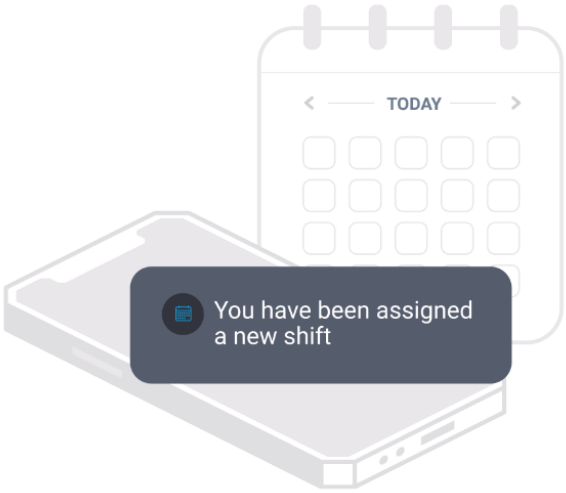
The BART Rostering module provides a simple way to assign teams and end-users to a variety of shift types, which may include day, afternoon, night, on-call, training, or campaign. Shifts can have an associated start and end time and may span across multiple days.

The BART 'Team Planner' rostering module also provides templates for easy future access.

A range of key roles may be assigned to a shift, which currently include:

- Crew Leader
- 2IC
- Driver
- Log Keeper

Once a team has been formed, Duty Officers can assign tasks, events, and incidents to the team. End-users are notified of their team status and responsibilities.



REPORTS

Incident Reports

BART stores all data relating to a brigade or unit's activities. Incident reports are automatically generated at the completion of a response, emailed to those specified. Reports include all key information, relevant to the incident and subsequent response:

Attendance

- When a member responds to an incident (time and location – LAT/LNG)
- What their response was (Accept, Decline, Other)

Crew Log

- What appliances were dispatched (Name, Type, Agency, SelCal, Mobile, Unit)
- What members were assigned to the appliance (Name, Position)
- The time and location for each turnout status recorded

Events Log

- Comments added to the incident (Time, Created by)

Attachments

- Attachments added to the incident (Time, Created by)

All appliances that are dispatched are recorded along with the members assigned to that appliance and their rank/ position. The time and location (LAT/LNG) of the appliance during each stage of the incident response are also recorded: Assigned / En-route / Arrived / Returning / Returned.

Reports Module

The BART system also has a dedicated reports module that can be found in the Members WebApp. Standard reports that we currently offer include:

User Attendance

- Broadcast Responses
- Declined Events
- Event Attendance
- Training Attendance
- User Attendance
- User Passport Usage

User Broadcast

- Send Broadcast
- Send Chat

User Availability

- At Station
- Available Now
- Weekly Availability

Current User Details

- Group User Qualifications
- User Devices
- User's Not Logged In
- Vehicle Tracking

DEVELOPMENT

TECHNOLOGY STACK

- Amazon Web Services (AWS) for Infrastructure services: RDS, EC2, SNS, S3.
- Azure DevOPs for Deployment and source control.
- Microsoft Windows Version:2016: Webserver Operating system
- AWS Aurora – MYSQL compatible Version 5.7: Database Management system (DBMS)
- Visual Studio -Version 2019 and .NET Framework 4.5 : Developer SDK
- ClamAV - file upload antivirus: V0.102
- JSReports - Version 2.7 : Report Server
- Twilio - Inbound and outbound SMS Service for non-smartphone users
- Google Firebase Cloud Messaging (FCM) - Sends Push Notifications to Android devices
- Apple push notification service (APNS) - Send Push Notifications to Apple iPhones/iPads
- Google Maps / Mapbox Mapping services - Provides mapping imagery for web, reports and mobile applications. Geolocation services for converting address to coordinates and coordinates to address.

AWS Infrastructure Services

Web Servers

EC2 Instance – Windows Server 2016

- High Availability, load balanced

Database

AWS Aurora RDS MYSQL High availability cluster

- Master Write instance
- Multiple Read instances
- Auto scaling read instances
- Encrypted at rest

Storage

S3 buckets for block level file storage

- Uploaded Images & documents
- PDF Reports
- Message attachments
- User profile pictures

Network Load balancer

- For high availability and load sharing of webservers

ENCRYPTION & KEY MANAGEMENT

We take security seriously and use our encryption methods to protect our customers data.

User passwords are stored with a non-reversable 'hash-with-salt' process, using the industry standard SHA-256 algorithm. This increases complexity and uniqueness to the resulting hash.

Passwords are never transferred away from the databases, only ever updated, and compared locally in database logic.

Data 'in transit' is provided only through HTTPS TLS 1.2 using a 256bit cypher.

Data 'at-rest' is encrypted using AES-256 encryption algorithm, which includes all replications and backups.

- All data transmitted to and from VPC utilises SSL/TLS HTTPS encryption
- Database is always encrypted at-rest, including backups.
- Specific S3 buckets can be encrypted – SSE-S3 (S3 managed keys)
- Daily Backups with a current retention of 5 days

CODE STANDARDS

We utilise the OWASP tools, methodologies, and guidelines to achieve application security through people, process and technology.

Application Environments

- **Local Development** – The development environment on our developers' local devices only.
- **Development** – On premises access only for developers and initial testing.
- **Test** – On premises, externally accessible with a setup mimicking Production.
- **Staging** – located on Production infrastructure for migration testing.
- **Production** – AWS high availability Infrastructure.

Release Strategy

We employ **DevOps** methodologies of CI/CD (Continuous Integration / Continuous Delivery) for releases - from development through to production.

1. Source code stored in Azure DevOps Services (Visual Studio Team Services)
2. Upon each commit, code is built, tested and packed into a versioned artefact.
3. Configuration files are transformed for each environment, files are stamped with build version.
4. Build automatically triggers a deployment to development and test environments.
5. Once tested and approved, version is manually triggered to deploy to staging and production. - Production deployment requires secondary approval
6. Final Smoke Test is performed to ensure no critical errors occurred with the migration
7. Production deployed artefacts are permanently stored for rollback and testing purposes.

EXPERIENCE

NSW RURAL FIRE SERVICE

The NSW RFS 'Member Availability and Turnout System' project involved the delivery of a fully tailored version of the BART platform to deliver a world-class availability and response solution.

The NSW RFS contract was awarded to BART Solutions in July 2020, and through close consultation with their project team we rolled the system out to 45,000 of their members on the 15th of December 2020 – on time and within budget.

A phased approach was taken with the integration and development of new functionality, as well as the rollout to NSW RFS members across the state.

Scope

- Allow members to indicate and manage their availability
- Provides a quick means for 'Call Out' responses
- Allow NSW RFS to manage resources, specifically member's availability for both pre-planning and incident response
- Provide NSW RFS with the ability to balance capability against member's skill sets
- Integrate and connect with other NSW RFS corporate and operational systems

Services

- Implementation of NSW RFS processes and workflows
- Functionality Enhancements
- Project Management
- Active Directory Integration
- SAP Integration
- 24x7 System Monitoring
- Superuser Training
- Training & Support Materials
- Staged Rollout across NSW
- Service Desk Integration
- Level 2 & 3 Support Desk

ABOUT US

BART Solutions are passionate about delivering user-centric software for effective management, planning, response, reporting and communication within the emergency sector. We are committed to ongoing research and development to discover the new possibilities that come with ever-changing technology.

We foster a culture of creativity and exploration to offer the most innovative products and services, which enables effective collaboration and open communication, better teamwork and more efficient problem solving.

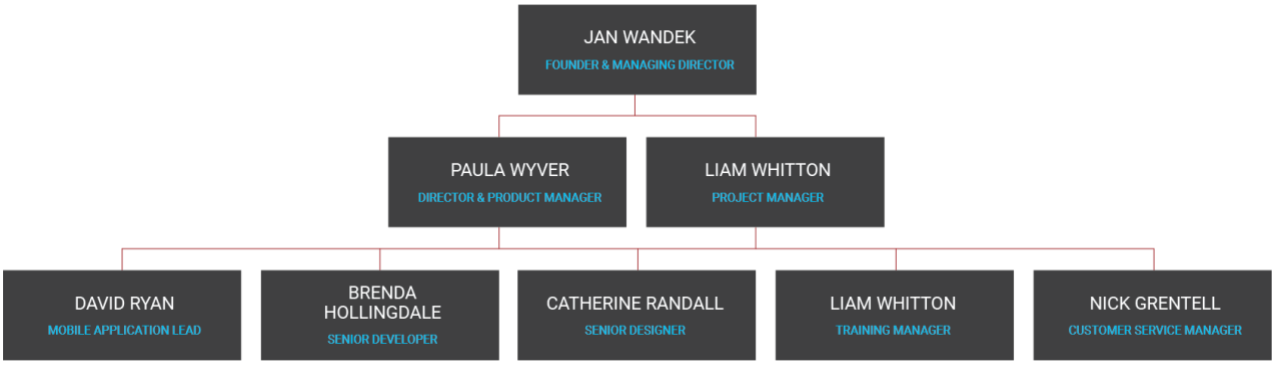
HISTORY

BART Solutions have a history spanning more than 40 years working with state and local government in a variety of projects including websites, smartphone applications and software solutions.

The company initially specialised in desktop-based finance, property, and mapping software for local government. During this time our largest customer was the ACT Government, where we developed and managed the whole of government property and receipting systems. The system helped raise $1 billion in revenue and collected $2 billion receipts on average per year.

We have also worked with the Canadian Health department, who allowed us to trial our communication system outside of Australia during the Canadian G8/G20 world leader conferences in 2010. During this trial we had the opportunity to provide situational awareness 24/7 to Emergency Services personnel to an area of over 50,000 km^2 to protect the world leaders utilising our solution out of Australia.

ORGANISATION STRUCTURE



CUSTOMERS

We have wide range of customers across Australia who use our software on a daily basis:

- Victoria Police
- NSW RFS
- DELWP
- Ambulance Victoria
- Australian Volunteer Coast Guard
- SES
- ACT ESA
- Transurban Crash Investigation
- Iluka Resources
- BHP
- DFES
- Northern Star Resources
- Royal Flying Doctors Service
- Westgold
- St John Ambulance
- Evolution Mining
- Hancock Prospecting
- Marine Rescue
- Bellevue Gold
- Atlas Iron
- Salvation Army
- KCGM