

Connect. ProTECHt. Go.

Stay safe and connected
on the move, at home, at
the office or on site with
Bamboo solutions.



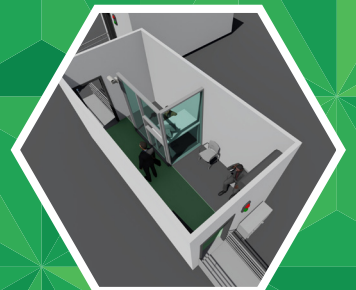
Intelligent Thermal Technology



Lone Worker Solution



Remote Connectivity



Technology Concepts

Connect. ProTECHt. Go.

Wherever you are, whatever the situation, Bamboo is committed to ensuring your business stays connected, protected and secure from your business systems to your individual staff members.

Take a look through this pack to explore Bamboo's business as usual solutions.

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For more information about any of our solutions, speak to the team.
Email hello@bamboo.tech or call 0800 804 4040.

Bamboo Live Screening Technology

The Bamboo Thermal Screening solution (BTS) is a temperature and facial screening system. It combines infrared thermal imaging technology and visible light imaging technology in one, to fulfil a non-contact, large scene, real-time temperature measurement and screening function. Based on deep learning algorithms which can accurately locate the face position and avoid interference from unrelated high temperature objects, the system can be used for rapid body temperature screening in controlled and uncontrolled crowded environments. The system will automatically alert if an abnormal body temperature is detected.

Without a rapid diagnostic tool you need a solution that is highly effective in public places with dense crowds of people, such as Airports (airside apron or landside departures), Subways, Bus stops, Ports, Schools, Hospitals, Hotels, Buildings, Supermarkets, etc.

Installed as an integrated solution into fabricated units, connected or stand alone, it enables efficient social distance queueing, pax sortation and patient flows.

Easy to deploy, it is highly scalable.

Standard Features:

► Stable, intelligent temperature measurement

Precisely locates human faces using deep learning algorithms to avoid irrelevant heat sources and remains stable while wearing a mask. Intelligent distance compensation greatly reduces the large fluctuations of ordinary infrared temperature measurement cameras.

► High throughput without stopping

Enables temperature measurement of multiple people at the same time. People don't have to stop and wait. The throughput is high, with up to 100 people per minute. Measuring at a safe distance from 1m to 5m, noncontact temperature measurement ensures a very low risk of disease infection.

► Accurate automatic temperature calibration

Automatic temperature calibrates according to the environment to achieve a high temperature measurement accuracy of $\pm 0.3^{\circ}\text{C}$ without manual operation.

► Data security

Alarm data is retrieval, provides daily temperature data statistics for efficient epidemic management. Personal information with normal temperature will not be stored.



Bamboo Live Screening Technology

The Core Components

► Thermal HD Camera

Standalone or Network configuration
Single or Multiple linked cameras
High Accuracy (0.3C) scanning the eye tear duct (more accurate than Forehead)
High Resolution (384 x 288) Image
Screens up to 100 people in 60 seconds
Supports up to 8 people in FOV (Field of Vision) at once (1-5 Meters)

► Black Body Thermal Calibration

Realtime Temperature Recalibration
Located near to scanning entrance to optimise accuracy
Easy Installation

► EDGE Analytics

Realtime Standalone Monitoring (Laptop)
Alert Notifications for temperature breaches (Audible and Visual)
28 Day local Video Storage (on the Encoder)
Local Data Storage and Backup (Laptop)
Networked or Cellular Internet Connectivity

► EDGEVIS Server and EDGEVIS Client

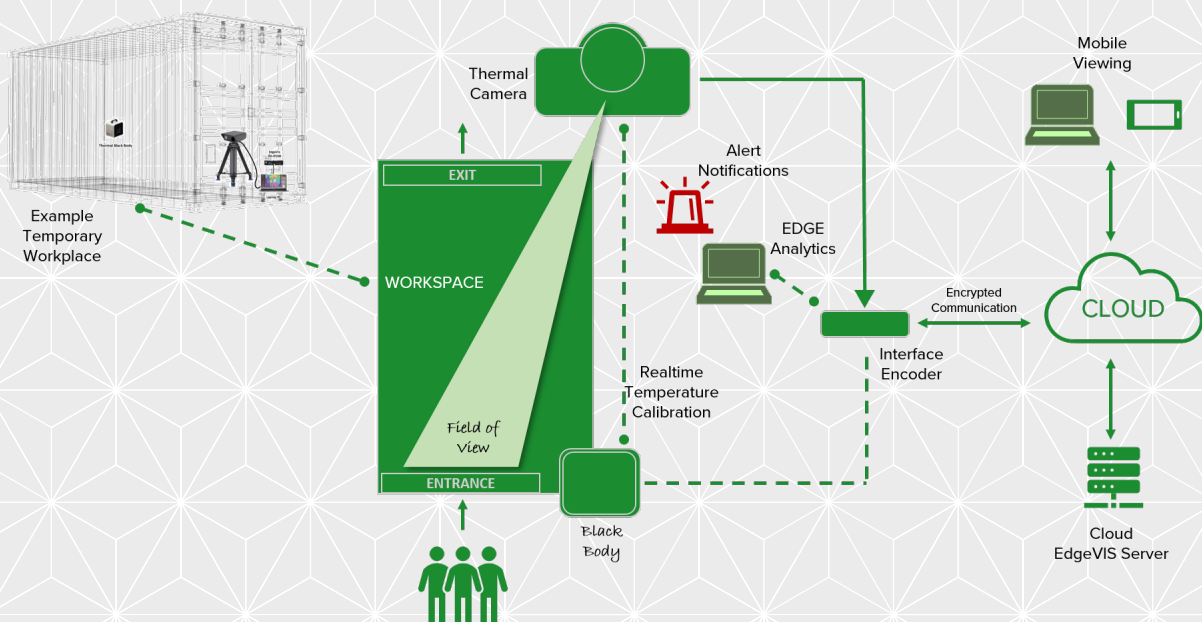
On-Premise or Cloud Based Solution
Point of Presence Network Routing
Remote Mobile Viewing – Laptop, Tablet or Smart Phone (EdgeVis Client)
Monitoring and Incident Management

► EDGEVIS Server and EDGE

Facial Recognition (Optional Extra)



Infrastructure Layout



Bamboo Live Screening Technology

Camera Features

Specification:			
Infrared Camera Resolution	384 x 288	Measurement Accuracy	$\pm 0.5^{\circ}\text{C}$ at 33°C - 42°C of target temperature ($\pm 0.3^{\circ}\text{C}$ with blackbody)
Field of View	47.0°(W) 35.6°(T)	Efficiency	100 persons/minute
Focal Length	8mm fixed lens	Visible Camera Resolution	1920 x 1080 (Full HD)
Measurement Range	$0^{\circ}\text{C} \sim 60^{\circ}\text{C}$	Working Temperature	16°C - 32°C (with 0.3°C accuracy with blackbody)

Please ask the team about Installation services and training for Screeners and Health Care Professionals (HCPs).

Enhanced features

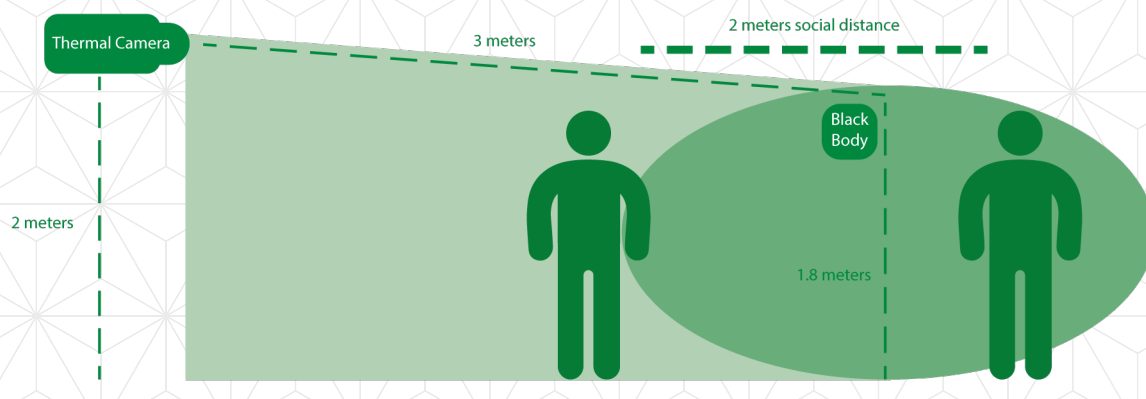
Facial recognition

In Healthcare environments the facial recognition enhancement can track patients and others within a facility without the need for a physical tracking device. This addition to the core system can identify if a specific person has access to certain areas or other restricted locations, or if they have visited outside of their pre-defined 'territory'.

In law enforcement, the technology greatly improves the power of surveillance.

As part of an office solution, or on construction sites, it can track employees and contractors entering and leaving facilities and sites without the need for repetitive access permission processes.

Installation Recommendations



Bamboo Live Screening Technology (Fixed)

The Bamboo Thermal Screening (Fixed) solution (BTS Fixed), integrates rapid thermal imaging-based temperature screening functionality.

It quickly measures the skin-surface temperature of individuals and then generates an alert if that falls outside of its pre-configured range.

Advanced detectors and algorithms allow for rapid screening and effective health management in controlled areas.

With the appropriate people management in place it operates effectively in a wide variety of environments including workplaces, offices, medical facilities, train stations and airports, schools, residential settings and more.

Please note, the temperature screening thermographic cameras are designed for the detection of skin-surface temperatures so as to achieve rapid preliminary screening in public areas. Actual core body temperatures should be further confirmed using clinical measurement devices. Under any circumstances, it is highly recommended to use thermographic cameras in accordance with local laws and regulations.

Features:

- ▶ Supports Vanadium Oxide uncooled sensor to measure target's temperature
- ▶ Fast temperature measurement mode: Detects face and skin-surface temperature without identity authentication
- ▶ Multiple authentication modes are available: card and temperature, face and temperature, card and face and temperature
- ▶ **Face mask alert (warning)**
If the presented is not wearing a mask, the device will sound a voice reminder, but is configured so that authentication or attendance is valid
- ▶ **Forced mask alert (denial)**
If the presented is not wearing a mask, the device will sound a voice reminder, and is configured so that authentication or attendance is denied.
- ▶ Triggers voice prompt when detecting abnormal temperature
- ▶ Configurable door status (open/close) when detecting abnormal temperature
- ▶ Transmits online and offline temperature information to the client software via TCP/IP communication and saves data on the client software
- ▶ Face recognition duration < 0.2s/user; face recognition accuracy rate ≥99%
- ▶ 50,000 face capacity, 50,000 card capacity and 100,000 event capacity
- ▶ Has an optional stand that turns it into a rapid deployment, moveable device



Specification:

Thermal Measurement Resolution	120 x 160	Measurement Accuracy	±0.5°C, without black body calibration
Measuring Distance	0.5 to 1.5m	Sensor	Vanadium Oxide uncooled sensor
Camera	2 MP dual-lens camera, WDR	Screen	7 inch touch screen, 1024 x 600
Temperature Range	30°C to 45°C	Working Temperature	0°C to 50°C, 10°C to 35°C for temperature measurement

Bamboo Live Screening Technology (Handheld)

The Bamboo Thermal Screening (Handheld) solution (BTS Handheld) is a handheld thermal camera, specifically designed for body temperature measurement.

It is equipped with a 160x120 resolution thermal detector and is capable of discovering and tracking people, with higher than normal body temperature, in crowded public areas and small, enclosed groups. With advanced detectors and algorithms, the BTS Handheld detects elevated skin-surface temperatures and is used in moving crowd scenarios with passengers, commuters and shoppers.

Being a handheld device this solution can be easily transported making it an ideal option for those who require assessment of people in varying environments. This device is often deployed as an additional unit to other fixed screening solutions and can be used in places such as customs, airports, schools and hospitals for inspection and quarantine.

Please note, the temperature screening thermographic cameras are designed for the detection of skin-surface temperatures so as to achieve rapid preliminary screening in public areas. Actual core body temperatures should be further confirmed using clinical measurement devices. Under any circumstances, it is highly recommended to use thermographic cameras in accordance with local laws and regulations.

Features:

- ▶ 160 x 120 resolution (thermal) and 8MP resolution (optical)*
- ▶ Thermographic accuracy up to $\pm 0.5^{\circ}\text{C}$
- ▶ Display fusion of thermal view and optical view
- ▶ 640 x 480 resolution 3.5" LCD touch display
- ▶ Supports live view on PC, mobile device or external monitor
- ▶ Supports audio intercom
- ▶ Support colour highlight alarm and audio alarm
- ▶ Has an optional tripod that turns it into fixed/rapid deployment device
- ▶ Can also be used with a Blackbody to give improved accuracy



Specification:			
Thermal Module Resolution	25Hz: 160 x 120	Measurement Accuracy	$\pm 0.5^{\circ}\text{C}$
Field of View	$25^{\circ} \times 18.7^{\circ}$	Battery Operating Time	4 hrs in normal temperature with Wi-Fi, Bluetooth and supplement light on. 5hrs without.
Focal Length	6.2mm (manual focus)	Video Resolution	640 x 480
Thermography Range	30°C to 45°C	Working Temperature	15°C to 35°C

Lone Worker Solution

The Alertcom Lone Worker Protect is a personal safety device that can be worn on a lanyard or attached to a belt, much like an ID card. In fact you can choose the ID card option!

Connecting you to help in an emergency using multi-network connectivity, the Alertcom device provides lone workers with the reassurance that wherever they are - day or night they can summon urgent assistance at the press of a button.



The benefits

The Alertcom Lone Worker Protect solution is one of Bamboo's end-to-end IoT solutions. This solution is a device that arrives ready with connectivity you won't have to look into separate SIM contracts.

With no contract term you won't be committed to a fixed period of time.

As a customer you will have access to the Alertcom portal. This allows nominated users to have visibility of management reports and online ordering. However, it is important to remind users that the GPRS feature is not a tracker and does not record location history. It simply allows the last known location to be viewed during an emergency.

Top features

- ▶ SOS alarm feature as standard
- ▶ User down alert
- ▶ Multi - network SIM
- ▶ Self - serve portal access
- ▶ 24/7 support with direct access to police control rooms in the case of an emergency
- ✔ Your workers feel safe and valued
- ✔ You can set your own contact plan
- ✔ You have the ability to initially assess the situation live with your worker
- ✔ You have the support of trained emergency response teams when it is needed
- ✔ You aren't alone in worst case scenarios
- ✔ You can demonstrate you meet your Duty of Care obligations

Managed 4G Router Connectivity

Bamboo's Managed 4G Router Connectivity ensures 'plug and play' from the get-go. Designed around wireless connectivity with business in mind, it provides the reliability and features which branch locations and remote sites require.

The Managed 4G Router Connectivity provides day-one connectivity in any location, delivered over 4G LTE networks.

Businesses can implement fast and secure connectivity from the day it is set up, whether it be a pop-up stand, a mobile business, a temporary space or a construction site. Empowering the site to progress at full speed.

This is a reliable mobile networking solution that delivers temporary connectivity while waiting for fixed line installations to be completed. It gives sites the access they need to their centralised back-office systems and applications. The solution can then convert to a failover once the fixed line is in place, extending its lifetime value.



The benefits

Bamboo solutions have been designed to meet the security and performance requirements of all businesses:

- ▶ Remote monitoring, maintenance and updates- wireless networks require constant management and when the network is highly disrupted, consistent physical access to equipment is impossible. Bamboo's solutions offer cloud-based management software which makes it simple to configure, deploy and maintain networks, supporting customers connectivity needs, from tens or hundreds to many thousands of connections.
- ▶ Designed for business-critical networks – our solutions offer a wide range of enterprise-grade gateways and routers which are scalable to support the demands of any business.
- ▶ Advanced application support – providing fast and reliable 4G LTE mobile connectivity, our feature-rich devices can support a wide variety of applications across the built environment from remote access to centralised systems to guest Wi-Fi in marketing suites.

Top features

- ▶ No extended lead time, deploy instantly
- ▶ Powerful enough support all business-critical applications
- ▶ Easily and securely extends access to the central, corporate network
- ▶ Can be later converted to a failover solution, maximising site resilience

Business as usual wherever you are with Bamboo



IoT

IoT - the Internet of Things connects machines, sensors, buildings, vehicles, and infrastructure together. Enabling them to communicate with each other and to be remotely controlled making it possible to monitor, locate and track an increasingly wide range of devices in the home, in the field and on your business premises.



Connectivity

From mobile to fixed, standard voice and data to multi-network connectivity, SIP, circuits or IoT - these are just some of the tools we use to help you connect and communicate. Wherever. Whenever. Bamboo offers all the services you need to ensure your business stays connected. Working in partnership with industry leaders across all our solutions, you will soon see the difference in the way we bring them all together.



Data

As digital transformation takes shape data has become an essential part of everything we do. Whether it's mobile data, capacity and bandwidth to access it or simply generating, collating and analysing, it all helps to make better business decisions, be more efficient and improve the customer experience. With Artificial Intelligence and Machine Learning partners at the ready, and technology workshops our forte, we can get you on your transformation journey.



Cyber
Secure IT

Educate, Protect and Recover. The three stages we've identified that help you safeguard your business and create a cyber strategy for a secure future. With audits and testing, training and Cyber Essentials, threat management systems and business continuity solutions, we can help you every step of the way.

Bamboo and Smartia

Smartia provides scalable Artificial Intelligence solutions that connect and transform industrial data into actionable insights. Crafting AI solutions that elevate automation, innovate processes and release valuable resource helps business improve efficiency and take a future focused approach to internal and external customer experiences.

Combined with our resilient connectivity solutions, this partnership is the perfect duo for technology and forward focused clients.



► Data Integration

Centralising industrial and operational data allows easy and secure access to information as and when needed

► Decision Tools

Clear, specific and timely information presented in an easy to understand format is key to successful decision making

► Artificial Intelligence

Artificial Intelligence (AI) and Machine Learning (ML) are radically transforming industrial operations.

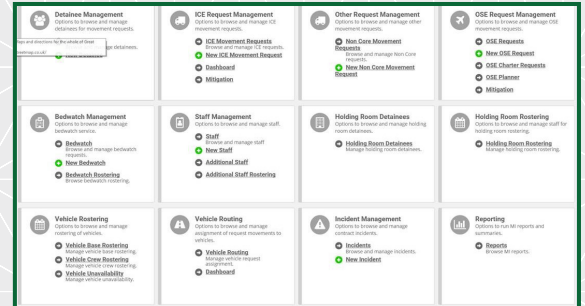
Projects include:

- Early Warning Systems
- Automated Process Monitoring
- Quality Control Automation
- Computer Vision Applications
- Anomaly Detection
- Predictive Maintenance
- Defect Analysis
- Inventory Optimisation

Bamboo Group's Government Outsourced Logistics Applications and Software

TechOP (part of the Bamboo Technology Group)

TechOP Solutions has a thirty-year heritage in writing, developing and maintaining software for industries that are encased in highly secure data and process protocols. Serving aviation, financial, medical, education industries and outsourced government projects for facilities and logistics management. The TechOP software team comprise of specially recruited developers who meet all the security compliance checks required to operate in these sectors. Sensitive commercial and purpose-built bespoke software is their expertise.



Government agency platforms

TechOP have recently specialised in the development of logistics platforms that meet the requirements of government agency contracts for the Home Office and specifically the Ministry of Justice (MoJ). The MoJ is a major government department, at the heart of the UK justice system, working to protect and advance the principles of justice. Their vision is to deliver a world-class justice system that works for everyone in society. MOJ is a ministerial department supported by 33 different agencies and public bodies.

Contracts that support ministerial visions are commonly contracted out to public bodies that bid for these specialised areas of procurement. TechOP are experienced in the production of collaborative bid processes with public bodies to win such contracts.

As a result of one such contract award TechOP has built a multi-functional system that has been designed to support the safe, secure and efficient transportation and placement of detainees between police custody, courts, prisons, and short term 'holding facilities' and immigration centres.

The principal framework and functionality is designed for agencies and public bodies to manage the data and delivery of safe, secure and professional custodial escort services. Using historical profile information held on secure databases, and live 'on the ground' incoming information, the platform provides users with a real time view. Thus, it allows management and planning of both complex needs and logistics and response to incidents as they occur. Designed with simplicity in mind, the primary interface provides quick and efficient access to a range of linked services that covers detainees, escort staff and vehicles at sea ports, airports and reporting centres across the UK to support border and immigration services.

The platform accommodates the storage and remote access of highly sensitive, detailed personal information that is crucial in operating core planning of this heavily regulated industry. Data is key and must be constantly updated for real time application. The platform caters for changing demands and logistics of individual jobs and mass deportation projects.

Functionality basics:

- ▶ Tracking requests from immigration officials
- ▶ Planning the most efficient ways of transporting detainees
- ▶ Assigning the correctly qualified escorts to jobs
- ▶ Detainee supervision planning
- ▶ Notifying vehicle crews via mobile devices of their assigned tasks
- ▶ Providing real-time view of all detainees in custody
- ▶ Maintaining records of detainee custody, movement and welfare actions
- ▶ Integrating with government IT systems

Tablets and applications

Tablet software and applications have been designed for live logistics tracking and ongoing management of detainee movement in UK facilities and deportation destinations.

These systems also meet the UK government standards for information security and business continuity, ensuring there is fail-over to a secondary data centre in the event of major outage affecting the primary.

Permissions of access are set stringently in compliance with specifications and security status approval of each contract award. Thus, ensuring that only the right authorities can schedule, plan and keep records. This allows permitted users to oversee or zoom in on any element of a detainee from their personal details and records to the route their escorts will take to get them to their destination, no matter where in the world that might be. Similarly, it ensures that staff details will be kept in order to establish who is best suited to what job, allow them to retain details of their jobs (e.g. miles driven) and schedule current and future jobs.

Reporting of management information and SLA performance against contract standards is also a vital component of such awards and as such reporting frameworks are built to be flexible, adaptable and relevant.

Job Schedule - Fri 16 Mar 2018

Birmingham Airport HR

Pickup 1 Dropoff 0

EAT ---:-- Target 14:00 ETA ---:--

Address

Postcode Tel No. Type Port Holding Room

Enroute

Detainees

Navigate

Campfield IRC

Jobs (2) Detainees (0)

Quality and flexibility assured

This logistics system solution is QA Certified ISO 27001 and Microsoft Certified Partner since 1995.

In addition, the use of the Microsoft Azure environment means added certainty in completing processes as the Azure environment has been approved by the UK government for hosting government official sensitive data. MS Azure allows the server resources deployed for an IT system to be easily configured to suit the application load and changes in customer requirements.

Bamboo Technology Group, which wholly owns TechOP Solutions, is a privately-owned company. As such, framework IPR sits with the company and existing platforms are tailored to suit the needs of any government or specific contract award requirements.

Benefits include:

- ▶ 'Always on' access to live data
- ▶ Runs on all desktop and tablet devices
- ▶ Supports automated scheduling and instructs vehicles through a mobile application
- ▶ Is hosted in the Microsoft Azure cloud hosting environment which has UK Government approval for 'Official Sensitive' applications
- ▶ Uses the security features built into the Microsoft.NET platform and conforms to the oWASP (open web application security project) standards for web security
- ▶ Highly adaptable for specific requirements.

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