

How NEC and the Hawaii Department of Transportation are Creating Safe and Touchless Travel Experiences

Customer

- Hawaii Department of Transportation

Challenges

- A safe, efficient and cost-effective solution was needed to welcome visitors back to the state of Hawaii while preventing the spread of COVID-19

Solution

- Thermal Sensing and Face Imaging solution powered by NEC Thermal Express, i:Delight and ICI Thermal Cameras
- NEC's UNIVERGE Network Operation Engine
- NEC QX Switches

Results

- Safe, touchless and cost-effective protection for first responders, airport employees, travelers and local communities
- Improved traveler experience due to a streamlined deplaning process and the elimination of bottlenecks that occurred from manual temperature checks
- Increased confidence in the safety of traveling to the state of Hawaii
- Greater support for Hawaii's economic recovery during and post COVID-19
- Established an enduring and sustainable pandemic safety capability that is efficient, seamless and contactless

The Hawaii Department of Transportation (HDOT) is responsible for the planning, design, construction, operation and maintenance of the state of Hawaii's facilities in all modes of transportation, including air, water and land. Its mission is to provide a safe, efficient, accessible, and sustainable inter-modal transportation system that ensures the mobility of people and goods and enhances and/or preserves economic prosperity and the quality of life.

Hawaii is known for spectacular beaches, unique wildlife and mild year-round weather. Tourism makes up a significant portion of Hawaii's economy, with many businesses revolving around the industry. When the COVID-19 pandemic struck and air travel came to a halt, the Hawaii Department of Transportation's Airport Division (HDOTA) needed a safe way to welcome visitors back into the state.

Challenges

HDOTA looked to reopen air travel in Hawaii with three priorities in mind:

- Protect the health and safety of airport employees and the traveling public by preventing the spread of COVID-19.
- Support the economic recovery of the state of Hawaii, which was significantly impacted by travel restrictions and a decline in tourism.
- Install and deploy a solution with no impact to existing airport operations, networks and systems across five disparate airports on four islands.

Initially, HDOTA implemented manual temperature checks to identify individuals with an elevated body temperature (EBT), a potential symptom of COVID-19. Per the Centers for Disease Control and Prevention (CDC), a person having an EBT over 100.4 degrees is an indicator of a potential illness. This process involved stationing employees at the gates of every arriving flight to take each passenger's temperature one by one. Not only was this process inefficient, it increased the risk of exposure and required additional funding and resources. Furthermore, this process resulted in long lines and bottlenecks that could potentially increase the risk of exposing employees and travelers to possible COVID-19 infection.

Looking for a safe way to bring travelers back into the state while reducing delays and bottlenecks in the deplaning process, HDOTA began to search for a vendor to provide integrated thermal screening and facial imaging solutions at its five major airports.

Solution

Ultimately, HDOTA selected an NEC-led team to provide an integrated “Thermal Sensing and Face Imaging System” in each of the state’s five airports. The team includes biometric, facial imaging and networking expertise from NEC, thermal sensing capabilities from Infrared Camera, Inc. (ICI), and installation and maintenance support from local Hawaiian businesses.

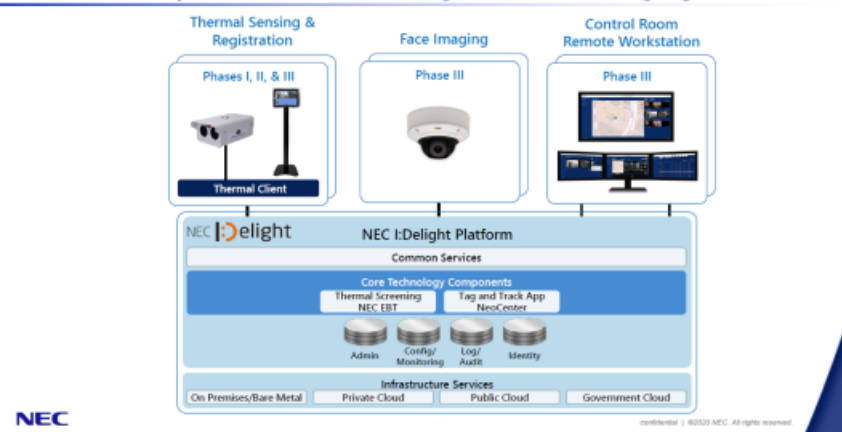
HDOTA’s System is an anonymous, contactless solution that accurately scans for EBT in passengers, even when face masks or PPE are present. The System is designed to meet the health and safety goals of the state of Hawaii to reduce or stop the spread of COVID-19 coming through the airports.

Touchless Temperature Screening with NEC NeoFace® Thermal Express

NEC NeoFace® Thermal Express is the thermal technology that powers HDOTA’s System. NeoFace Thermal Express provides quick, touchless physical access and thermal screening in demanding, high-throughput environments. Built with industry-leading sensors and top-ranked NEC software, NeoFace Thermal Express allows HDOTA to detect the temperature of deplaning passengers with exceptional accuracy and efficiency.

During the deplaning process, ICI thermal screening cameras mounted at the exit of the jet bridges monitor the temperature of each passenger as they exit the plane and security checkpoints. Passengers can pass freely into the terminal, eliminating any long lines or bottlenecks that come with manual temperature checks. If the System detects a passenger with an EBT of 100.4 degrees or higher, an image is taken and security personnel is notified via an alert in one of several centralized monitoring stations or by direct monitoring and observation at the gate. Only images of passengers detected with an EBT are displayed, allowing airport security representatives to easily identify the passenger and pull them aside for further inspection.

Baseline Scope: Thermal Screening and Facial Imaging Solutions



Efficient Network Monitoring with NEC UNIVERGE Network Operation Engine (NOE)

In addition, HDOTA selected NEC to extend its network infrastructure with the capability to transport all real-time video traffic generated by the high-definition thermal and facial imaging cameras to the I:Delight System. NEC QX Ethernet switches were selected for their reliability and ease of use, and the NEC UNIVERGE Network Operation Engine (NOE) for its ability to provide centralized, enterprise-class network management.

With more than 100 switches and over 200 IP-based cameras dispersed across five airports and four islands, the ability to manage and monitor the network remotely and from a centralized location was critical. Without NOE, monitoring and managing such a widespread, geographically dispersed network would require a tremendous amount of time (to include travel time between islands), work and resources.



NEC UNIVERGE Network Operation Engine (NOE) provides complete centralized visibility and management of all switches and endpoint devices through an easy-to-use Graphical User Interface (GUI).

UNIVERGE
Network Operation Engine

Dashboard Inventory Map Monitor Network Settings Application Event System

Application > NETWORK VISUALIZATION

TOPOLOGY MAP NOTIFICATION 79

Nodes List (355)

- NOE Managed (73)
- NOE Unmanaged (282)

Map Settings

Display Options:

- NOE Name
- Management IP Address
- System Name
- Chassis ID
- Multilink
- Bandwidth Usage

V1.4.0.0 build110.e17

Using a secure Virtual Private Network (VPN) connection, NEC system administrators can access the NOE Controller from anywhere and gain visibility into the network's health and operational status. Administrators receive a global view of the entire network, with the ability to zoom-in to easily check network status and detect fault on any area of the network.

To ensure the network operates properly, a multitude of diagnostics run periodically or on demand:

- Health Check ensures nodes (switches or end devices) are up and running. Typically runs every 60 minutes, or on demand.
- Link Status verifies the connections between switches or between switches and end devices are operational.
- Bandwidth Monitoring measures the links utilization and displays it on the network map, to gauge the utilization and performance of the network.
- Audits will check for configuration errors. Typically runs every day at midnight or on demand. This way even if the IT personnel that manages the network made a mistake, it can be quickly located and corrected.

Once an anomaly is reported, it can be easily corrected using the GUI that shows the error on the network map.

Privacy and Security

NEC worked closely with HDOTA to implement a solution that meets the requirements of the state of Hawaii using a human rights and privacy first approach that will proactively meet or exceed international privacy norms.

All images collected remain fully anonymous which means the traveler's image is not connected to personal information, such as name, address or driver's license number. The System does not contain information about criminal history or outstanding warrants, nor does it connect to any external systems. Additionally, all enrolled EBT images are deleted within 30 minutes and are not shared with any outside agencies. Passengers with a temperature of 100.3 degrees or lower will not have their image taken at all.

NEC has invested globally in cybersecurity in terms of personnel, technology, platforms, and other resources. As a result, the System architecture leverages data encryption capabilities and best practices at every level.

Results

Today, NEC's technology is deployed at the Daniel K. Inouye International Airport (HNL), Kahului Airport (OGG), Lihue Airport (LIH), Ellison Onizuka Kona International Airport at Keahole (KOA) and Hilo International Airport (ITO).

The System currently monitors all arriving transpacific flights and security checkpoints. Coupled with additional pre-screening measures, the System has played a critical role in ensuring the health and safety of employees and visitors while helping to rebuild trust in the travel experience.

Since deploying the System, HDOTA has seen the following improvements across its airports:

- Safe, touchless and cost-effective protection for first responders, airport employees, travelers and local communities.
- Improved traveler experience due to a streamlined deplaning process and the elimination of bottlenecks that occurred from manual temperature checks.
- Increased confidence in the safety of traveling to the state of Hawaii and between islands.
- Greater support for Hawaii's economic recovery during and post COVID-19.

Corporate Headquarters (Japan)

NEC Corporation
nec.com

North America (USA & Canada)

NEC Corporation of America
necam.com

NEC Enterprise Solutions

NEC Europe Ltd
nec-enterprise.com

APAC

NEC Asia Pacific Pte Ltd
sg.nec.com

Latin America

NEC Latin America
latam.necam.com

About NEC Corporation of America: Headquartered in Irving, Texas, NEC Corporation of America is a leading technology integrator providing solutions that improve the way people work and communicate. NEC delivers integrated Solutions for Society that are aligned with our customers' priorities to create new value for people, businesses and society, with a special focus on safety, security and efficiency. We deliver one of the industry's strongest and most innovative portfolios of communications, analytics, security, biometrics and technology solutions that unleash customers' productivity potential. Through these solutions, NEC combines its best-in-class solutions and technology, and leverages a robust partner ecosystem to solve today's most complex business problems. NEC Corporation of America is a wholly-owned subsidiary of NEC Corporation, a global technology leader with a presence in 160 countries and \$25.2 billion in revenues. For more information, visit necam.com.