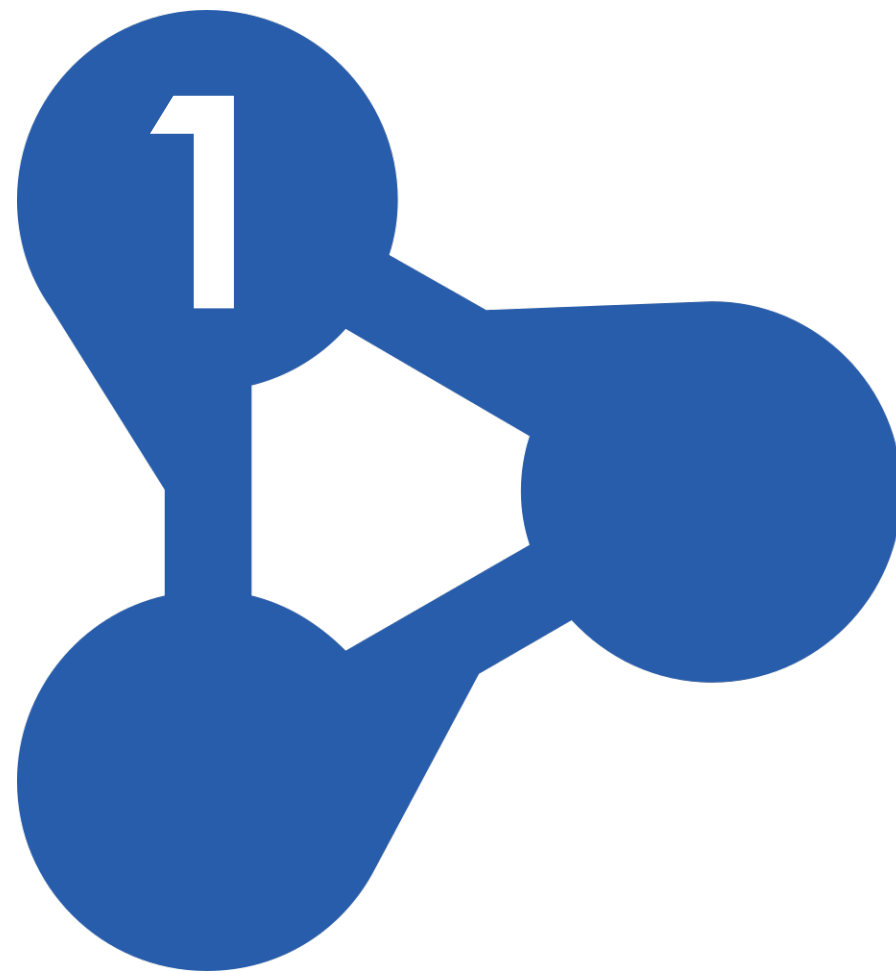# Torutek

Facial Recognition Solution

Brief Overview

June 2019

THE SOLUTION

The Leading Facial Recognition System in the New Zealand Gaming Industry

THE BUILDING BLOCKS OF THE SOLUTION

CAMERA Hardware	**NODE** Hardware	**GUARDIAN** Software	**CONCERN** Software	**SUPPORT**
Face Detection	Edge image processing	Recognition System	POI Database	On-going Support and Future Development

GUARDIAN RECOGNITION

The Guardian Facial recognition solution has almost unlimited scalability to support thousands of cameras and execute high-speed facial matching against a database of millions of registered Persons of Interest.

CAPTURE

Multiple high-definition cameras are installed.

EXTRACTION

Obtains and extracts photos from video stream

COMPARISON

Analyse each face to create a unique facial signature

MATCHING

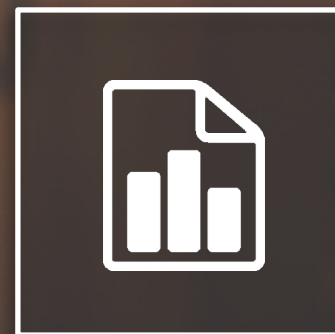Compare facial signature against a database

CONCERN DATABASE

CONCERN is a cloud-based POI database to enable all interested parties in your organisation to have access to the solution from a single, easy to use portal
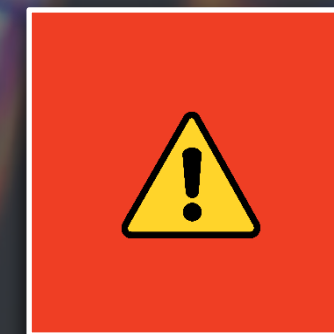
POI Viewer
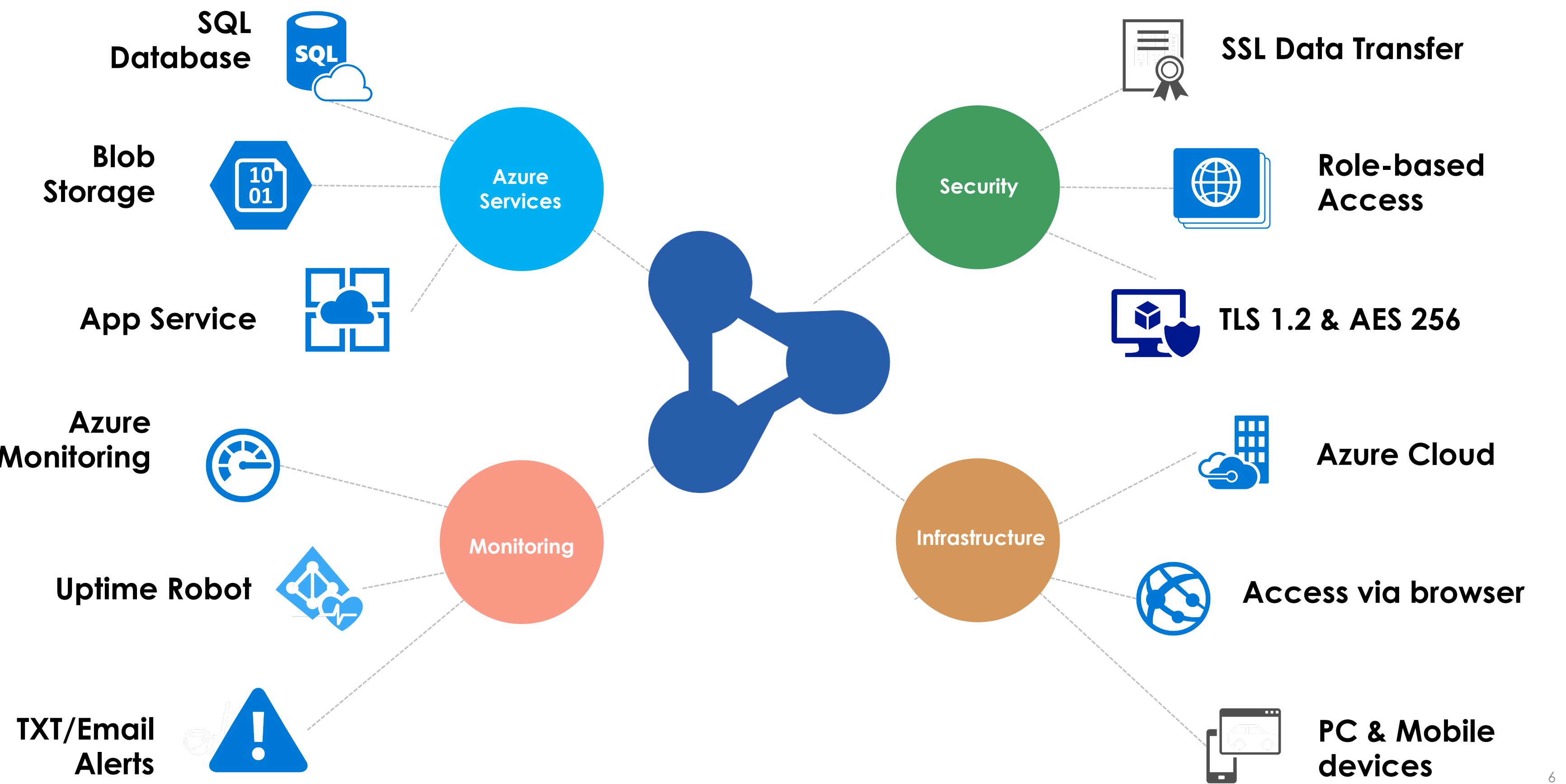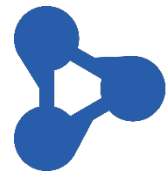
Photo Validation

Reporting

Administration

Notification

POI Monitoring

SQL Database

Blob Storage

App Service

Azure Services

SSL Data Transfer

Role-based Access

Security

TLS 1.2 & AES 256

Azure Monitoring

Uptime Robot

Monitoring

TXT/Email Alerts

Azure Cloud

Infrastructure

Access via browser

PC & Mobile devices

THE SOLUTION – KEY BENEFITS

REAL-TIME FACIAL RECOGNITION

Identify persons of interest from a large database fast. This enables you to improve your business outcomes, get immediate detection of POIs and respond more quickly to issues

ENABLES CENTRAL MONITORING

The solution allows our customers to monitor all casinos centrally

FLEXIBLE INTEGRATION

The APIs in the solution make moving data in and out of the system easy

SIMPLE TO IMPLEMENT

A fully managed, turn-key solution is provided

SCALABLE

The solution has the ability to analyse and find matches across thousands of facial photos from a network of thousands of cameras; returning results in less than a few seconds

LOW OPERATING COST

Intelligent software is developed and applied in each component of the system in order to optimise the operating cost of the system

ACCURACY

According to the latest credible NIST Face Recognition Vendor Test (FRVT) report[1], which measures recognition accuracy for 127 algorithms from 45 developers worldwide, the latest **Microsoft-4 recognition** algorithm is ranked **the best in the world**.

Application Mode	Metric	Num-subjects	Enrollment type	Num-images	Algorithm	FNIR Raw	Corrected[3]
Investigation	Miss rate Rank-50	12M	Lifetime	26.1M	Microsoft-4	0.06%	0.06%
Investigation	Miss rate Rank-1	12M	Lifetime	26.1M	Microsoft-4	0.19%	0.19%
Investigation	Miss rate Rank-1	12M	Recent	12M	Microsoft-4	0.45%	0.27%

Table 2: Absolute accuracy 2018.

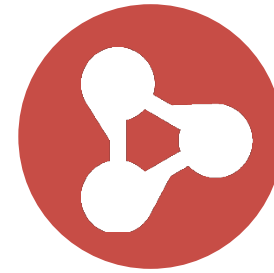[1] NISTIR 8238 - Ongoing Face Recognition Vendor Test (FRVT) https://nvlpubs.nist.gov/nistpubs/ir/2018/NIST.IR.8238.pdf

IMPLEMENTATION

An Agile Approach to Providing a Fully
Managed, Turn Key Solution

2

IMPLEMENTATION APPROACH
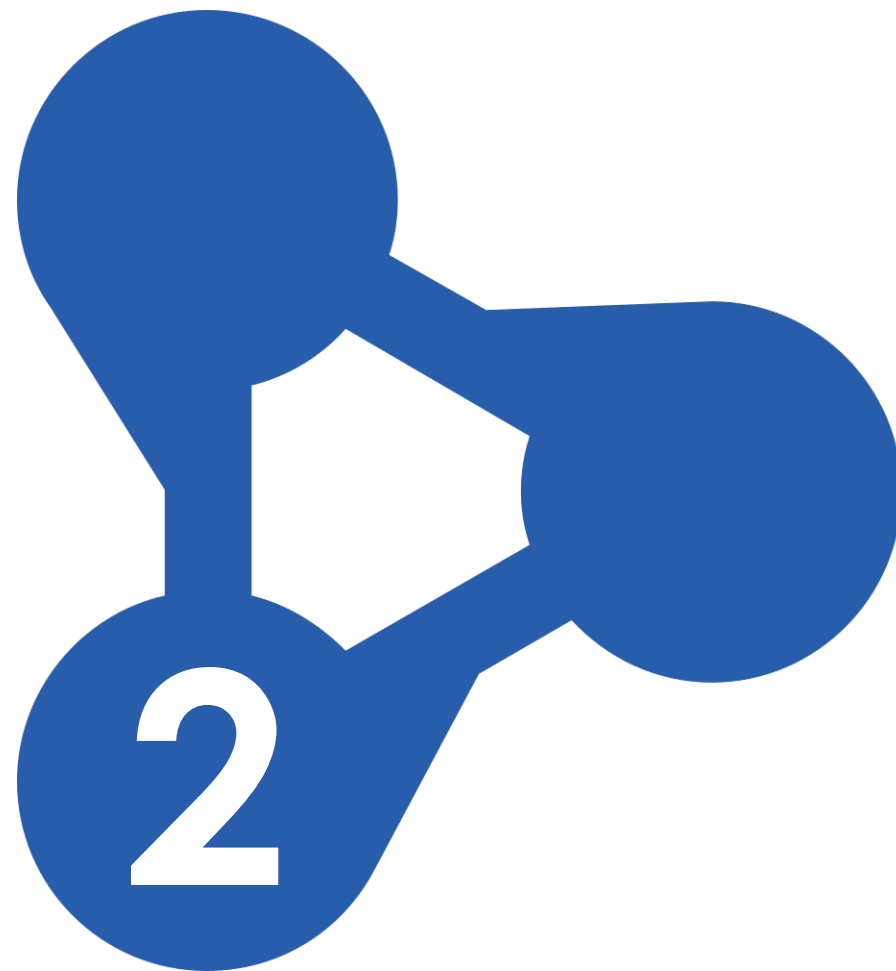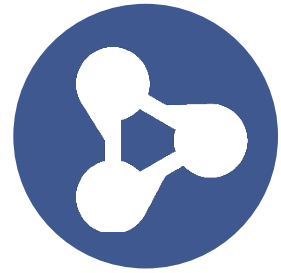
Agile

Apply the agile and dynamic systems development method (DSDM) implementation approach.

Enhancements

Make the required iterative and incremental configuration changes to meet customer requirements

Resource

Our experienced team in New Zealand - capable of delivering the solution and enhancements cost-effectively and on-time.

Installation

Pilot implementations were deployed to both Auckland and Hamilton casinos in very short timeframes, and were very successful.
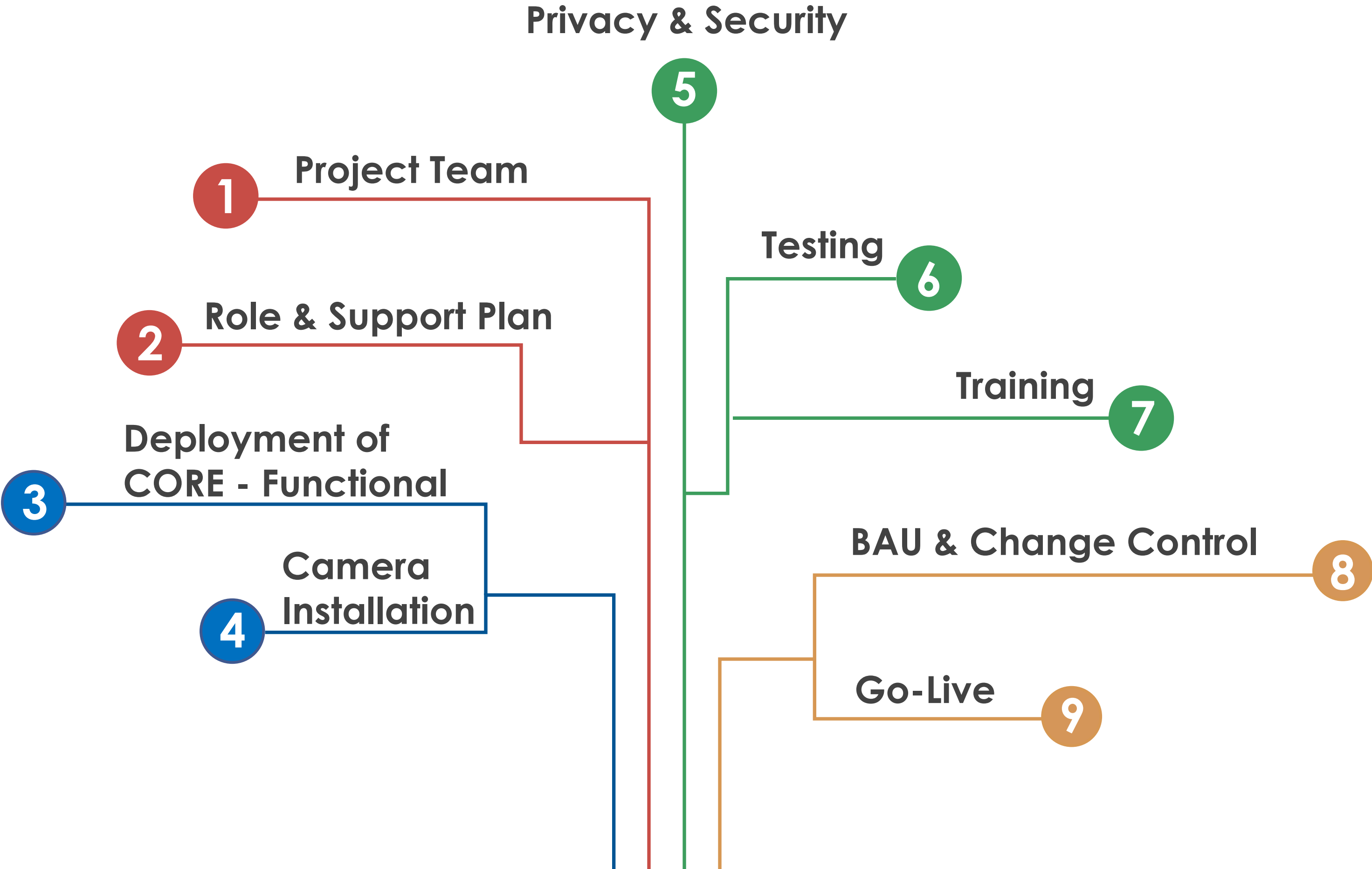We have all the required hardware in stock and ready to deploy.

Integration

The system is architected to enable easy integration with other parties and systems; we will work with customer to manage integration with third-party software and providers
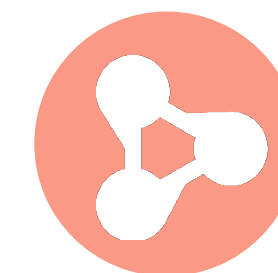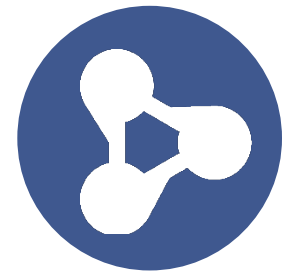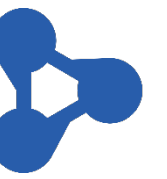
Transition

We apply the "train-a-trainer" approach for knowledge transfer, and provide training materials, application maintenance / deployment documentation, and API documentation for system integration

Privacy & Security

5

1 Project Team

Testing **6**

2 Role & Support Plan

Training **7**

Deployment of
CORE - Functional

3

BAU & Change Control **8**

Camera
Installation

4

Go-Live **9**

Managed
by

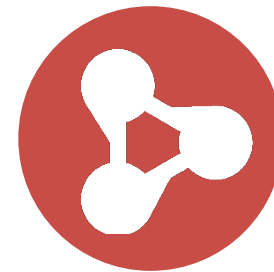TORUTEK

SUPPORT SERVICES

Location

Support across New Zealand and Australia from our Hamilton office

Help

New Zealand Business hours Help Desk number is 0508 TORUTEK (0508 867 883) or email to frsupport@torutek.com

Maintenance

Support the system and its on-going performance as a managed service.

Resolution

Our support resolves faults as quickly and effectively as possible. Technical support offers work-arounds or resolutions to issues and keeps users up to date with regular progress reports and resolution time estimates.

Enhancement

Our innovation and development is on-going, but our customers have full control over which updates and releases get deployed and when. Our release management process provides traceability of changes from check-in to release to enable auditing of the delivery process
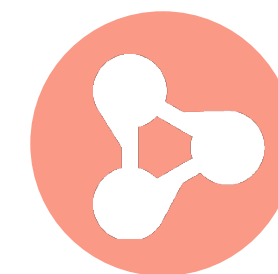
Account

We aim to build a long-term, mutually beneficial partnership with our customers.
Your account manager will have monthly account management catchup sessions with you to discuss your aspirations for our services, its performance, issues and SLAs.

THANK YOU

QUESTIONS?