GSF

GSF HEARTBEAT SECURITY KEY ECA\ engineered computer appliance

DATA BAY 5 · DATA BAY 10 · DATA BAY 15
DATA BAY 4 · DATA BAY 9 · DATA BAY 14
DATA BAY 3 · DATA BAY 8 · DATA BAY 13
DATA BAY 2 · DATA BAY 7 · DATA BAY 12
DATA BAY 1 · DATA BAY 6 · DATA BAY 11

ECA\

Processing Server • Network Video Recorder • Storage Server •

ECA\

engineered computer appliance

/en-juh-neer/   /kəmˈpjuːtə/   /əˈplaɪəns/

ECA is an advanced system platform that self-run, monitor and recover. It automatically takes care of typical failures and unintended human errors, while it constantly works to ensure optimum system efficiency. You can now enjoy absolute peace of mind from a system that is designed to continuously operate, always.

Connected · Machine

4th generation ECA. FX40E

ECA4 was designed with IOT in mind. It is cloud connected for machine status reporting, operation control, and recovery via cloud command*.

Linked with
Pro-Active Service

With cloud connected data collection on machine status, we will be able to provide Ai (Artificial Intelligent) based machine monitoring. With linked to Pro-Active Service Engineers, this… make mission critical application like surveillance (CCTV) the next level of support satisfaction *.

* via Wilson Cloud Service

Powerful Performance · Quality Built

4th generation ECA. DX40E

Superb CCTV Workloads

All ECAs machine are pre-installed with Intel Xeon processor, paired with 8 or 16GB ECC RAM. Capable to handles up to 200 channels of cameras recording in a single system or 100 channels live CCTV monitoring as client workstation.

GSF Intel Case Study PDF here

Quality Designed and Built by GSF

ECA4 is design and assemble by GSF in Malaysia. Start from the chassis structure design, air flown of every component parts in the ECA, and carefully engineered and hand-built by our passionate engineers.

x64bit ecaOS-5 powered by Windows 10

ecaOS-5 is built on top of 64bits Microsoft® Windows 10 Enterprise. It will be one of the modern world operating system for the next 10 years. ecaOS-5 will be much efficient, reliable and with greater performance that ever.

Designed for Surveillance Storage

Redundant Storage System

All ECA4s are featured with redundant storage system (RSS*) as default. RSS is a technology in ecaOS-5 that protects your data from drive failures. Support massive storage up to 150 terabytes in single system, and capable to store 180 days of CCTV evidence.

Details of RSS Study Report here

* RSS powered by Microsoft® Storage Space

DiskGuard with Activity, Health and Disk Serial No. Tracking

All ECAs record the disk serial no. in each Bay, incase someone takes away your evidence and replaced it with a new disk. DiskGuard will constantly monitor all the disks activity, if the recording (write) is below the threshold, it will inform you on suspecting CCTV no recordings, as well as disk health monitoring and alerts.

Tested for Real VMS Workloads

All up to 600 Mbps bandwidth validated for its consistency performance. This was tested at GSF own TechLAB™. By simulating constant bit rate of 200CH video stream, continuous recording into 120TB of RSS Storage Pool (15units of 8TB Seagate Skyhawk AI).

Seagate® Validated with Very Good Performance

All ECA4s had been validated at Seagate Singapore Design Centre – The Shugart Technical lab for further performance test on vibration and resonance. We simulated the ambient of 55 °C condition with 15units of HDD installed.

Download Seagate ECA Test Report here

Seagate
SkyHawk

Guardian . ecaOS

App Monitor

You can add any applications into App monitor and let Guardian act as watchdog, to supervise if your app is no responding, or if the app has been accidently closed, it will respawn the app automatically.

Shield

This is a protected OS, the system is operated under system memory (RAM) without commit any writes into the OS disk. System will discard all changes whenever system rebooted.

System Monitoring

Guardian will actively monitor activities for CPU, Memory, Network, and Disk drives in ECA. In the abnormal event triggered, Guardian will send alert to notify users or communicate with Heartbeat for self recovery.

Triple Layer Operating System

ecaOS is built in 3 layers,

Factory Layer is OS optimized level or platform ready level without user settings or configurations.

Deploy Layer is OS with all settings and configurations done accordingly to job requirements, or so called 'Golden Layer'after system integrator done all the configurations for handover to user.

User Layer is the operating OS for user usage with Shield feature. Inthe event user layer is corrupted, you can command Soft Reset to the ECA for system recovery by loading the Deploy Layer. This only takes about 10 minutes, and the process can be done without any technical person's assistance.

User (Shield)

Deploy

Factory

Soft Reset

Hard Reset

Triple Layer ecaOS
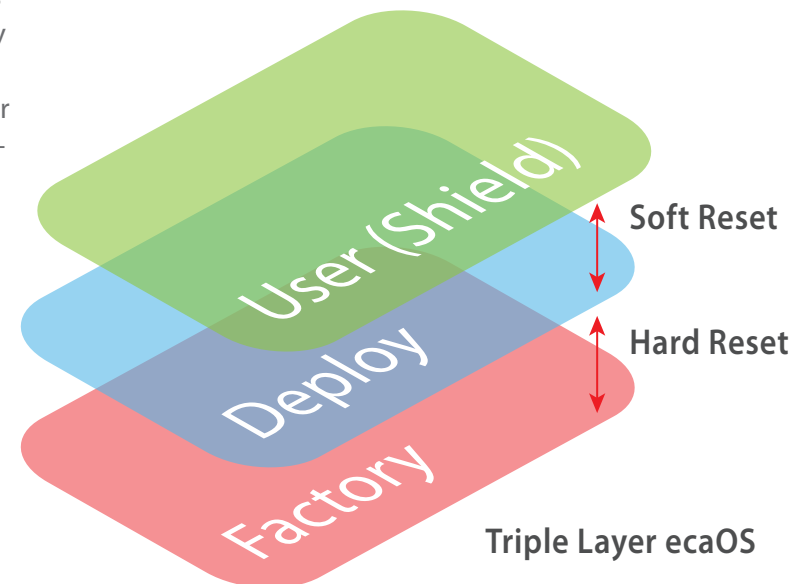
# Heartbeat 2 · Microprocessor

Secured Cloud Communicator

Heartbeat is the communicator that sends data from ECA to Wilsoncloud. It also receives command from Wilsoncloud to authenticate orders for self recovery remotely. All communications are encrypted in RSA 2048bits SSL before transmit to the internet.

Auto Recovery Process

When authenticated order received from Security Key, Heartbeat will perform its own self system recovery to repair the ecaOS. It also stores triple layers ecaOS in its own onboard storage.

Sensors

More that 30 sensors has been built into Heartbeat for ECA machine data collection and monitoring, like machine power detection, temperature, main-board, buttons, chassis, internet gateway, external I/O, system stage, etc. It also self-sustained for 12 hours with its own built-in lithium polymer battery.
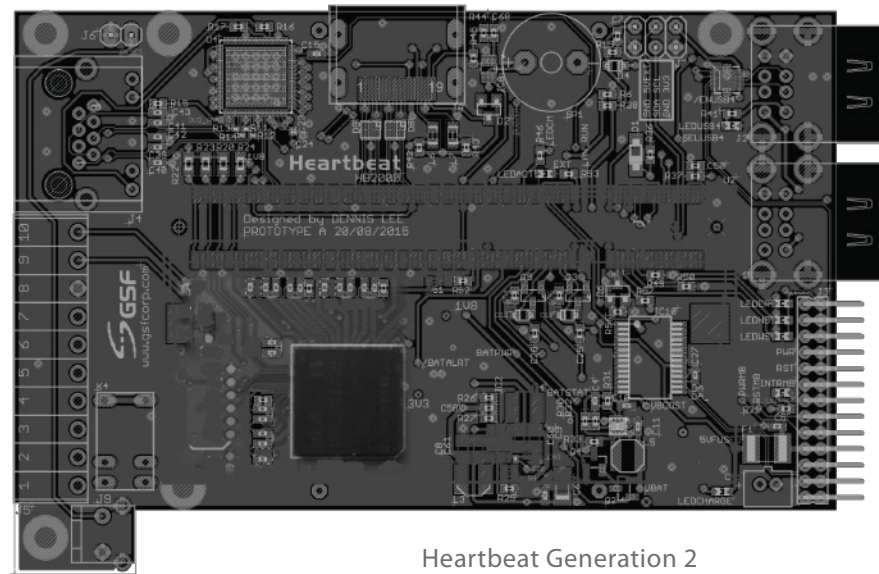
Heartbeat Generation 2

Security Key .
Virtual Code .
Physical Token .

Security Key

Secure System Access

Security Key is uniquely paired to each machine with specific authenticator token. It can't be cloned. Both Physical or Virtual Key are using 2048bits RSA encryption technology, to eliminate unauthorized system access. Furthermore, ECA Virtual Key is added with a time-based OTP (one time passcode), the code will change in every 30 seconds.

Command Order Authenticator

Security Key also act as a command order authenticator, to recue and restore the ECA system, or change and save new settings. Nothing gets done without the Security Key.

Authorized Shutdown

ECA was designed for 24x7 Surveillance applications, it is not suppose to shutdown, or forced to shutdown. The machine will boot up again, no matter how you try. No Key, No Shutdown.

TrueBlue Support

Service and support from the people who knows your ECA best.

3 years Next Business Day* Hardware Replacement

With TrueBlue Care bundled in every ECA purchased, it automatically comes with 3 years next business day (Carry-IN) hardware replacement.
*Depends on country and parts availability. TrueBlue Care Pack is purchase separately.

Phone & Remote Support & Carry-In Service Centre

All ECA comes with international phone and remote support, for help on settings or using the ECA.
* Working hours only. Mon-Fri. 9am-6pm (GMT+8)

Pay-per-request Onsite Service

Support at your location, as and when you need it, to solve specific problems and issues. Support on-site by our professional TrueBlue engineer.

TrueBlue TNC

A support plan will be designed for the testing and commissioning, upon completion of cabling and equipment installation, to archive the best out of ECA deployment onsite. Training to user will be included.

Protected Operation

System Recovery

Protected from Vandalism

Application Accidentally Closed or Hang

ECA can monitor any application in windows, if there is no response or accidentally closed, Guardian will automatic respawn.

https://youtu.be/UHmgYpFWwy4

Misplaced Settings

This is a protected operation environment, we understood that inmany cases, customer misplaced the settings, like example deleted the cameras, and they ask for support. By simply reboot the system, we can back to Origin. ECA Shield feature run in "system memory only" even virus attack, by rebooting the system it will refresh the ecaOS and software.

https://youtu.be/ATeoZRXqITI

System Freeze

Auto Recover from system hang. This is hardware based microprocessor to reboot the system if OS no longer alive. This is useful for example during holiday, when the factory is close and everyoneis on holiday, the system will recoveredwithin minutes if there is a breakdown like system hang or blue screen of dead happened. The worst case will be customer losing a few minutes of recording, instead of waiting till the worker resume, and manually reboot the computer (few days lost recordings).

https://youtu.be/M_En70wFHV4

System Crashed

Even in total OS crashed, you can recover the system without need of any technical person. This process called "Soft Reset" and "Hard Reset". By simply plug in the Security Key with a few click, or command it via Wilson Cloud with your virtual security key.

https://youtu.be/eEQsULyO6eM

Force Shutdown

The most easier way to vandalize the CCTV system is by simply just shut it down, thus no more recordings will be made. ECA build with "Shutdown Authorization" You only can shutdown the system with our own "Security Key" no matter how you try by pressing the power button to force shutdown the PC or sending the command line to shutdown, it will auto boot-up again in all these unauthorized shutdown.

https://youtu.be/peZWMAhF1Eg

Power Cut

In the most common case ~ 'Sabotage'. You do not need Hacker, but just simply 'Trip the power' to the machine. We learnt this from actual case scenario from our customer in logistic, we understood many case happened to internal accomplice, they can power cut the AC supply before they goes home, and after 8 hours of UPS depleted, the system no longer running. Bad things are to happen then.....with ECA, this scenario will hardly work because ECA will send out machine failed signal like example battery powered siren. This made possible because of our 'Heartbeat' with internal battery.

https://youtu.be/iiBtdhbdO3U

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ECA Product Series

	MX40 Processing Server	DX40 Network Video Recorder	EX40 Network Video Recorder	FX40 Network Video Recorder	VW40 Video Workstation
Mount	Rack	Rack	Rack	Rack	Tower/Rack
ecaOS option	Windows 10 Enterprise LTSB Window Server 2019	Windows 10 Enterprise LTSB Window Server 2019	Windows 10 Enterprise LTSB Window Server 2019	Windows 10 Enterprise LTSB Window Server 2019	Windows 10 Enterprise LTSB
Heartbeat	Generation 2	Generation 2	Generation 2	Generation 2	Generation 1
Security Key	Physical and Virtual	Physical and Virtual	Physical and Virtual	Physical and Virtual	Physical and Virtual
Wilson Cloud Support	Yes	Yes	Yes	Yes	No
Storage	Hot-swap : 0 Bay Internal : 7* HDDs	Hot-swap : 5 Bays Internal : 2 HDDs	Hot-swap : 10 Bays Internal : 1 HDD	Hot-swap : 15 Bays Internal : 0 HDD	Hot-swap : 0 Bay Internal : 5* HDDs
Redundant Storage System (RSS) & Support	Yes	Yes	Yes	Yes	Yes
Reommended Usage	Processing Server	Recording Server	Recording Server	Recording Server	Video Workstation

With optional internal HDD tray.

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