VeroGuard
Systems

VeroGuard Business ID

Build a Trusted Ecosystem: Secure and control distribution of sensitive data and facilitate secure supply chain wide collaboration.

Businesses require partners to compete, especially at a large scale. Business partnerships are the spice that can make or break a venture, create ongoing value and build long term trust and growth.

According to a survey conducted by the “Ponemon Institute”, 56% of organisations have had a breach that was caused by one of their vendors or suppliers. Meanwhile, the average number of third parties (ie Vendors) with access to sensitive information is increasing and only a few organisations know if those partners are sharing that information with other suppliers.

In this age of cyber-crime, it is said that there are two types of businesses, those that have been hacked and those that are yet to be hacked.

> *“Your customers don’t care if it was your supplier that lost their data, it’s still your breach.”*

Business ID and Trusted Ecosystems

Trust between businesses can take years to obtain, and only a moment to lose.

Larger organisations have the resources to employ sophisticated cyber defences, creating and overseeing system and network access policies and end user devices; however, smaller businesses often lack the means to create the necessary structures and governance to prevent or even detect cyberattacks. Business impact typically does not occur immediately after a breach. It takes time for the attackers to map out the victim network, steal credentials, spread laterally and complete their mission. In fact, the average detection time for a business to notice it has been attacked/hacked is around 150 days.

Is your supply chain a risk?

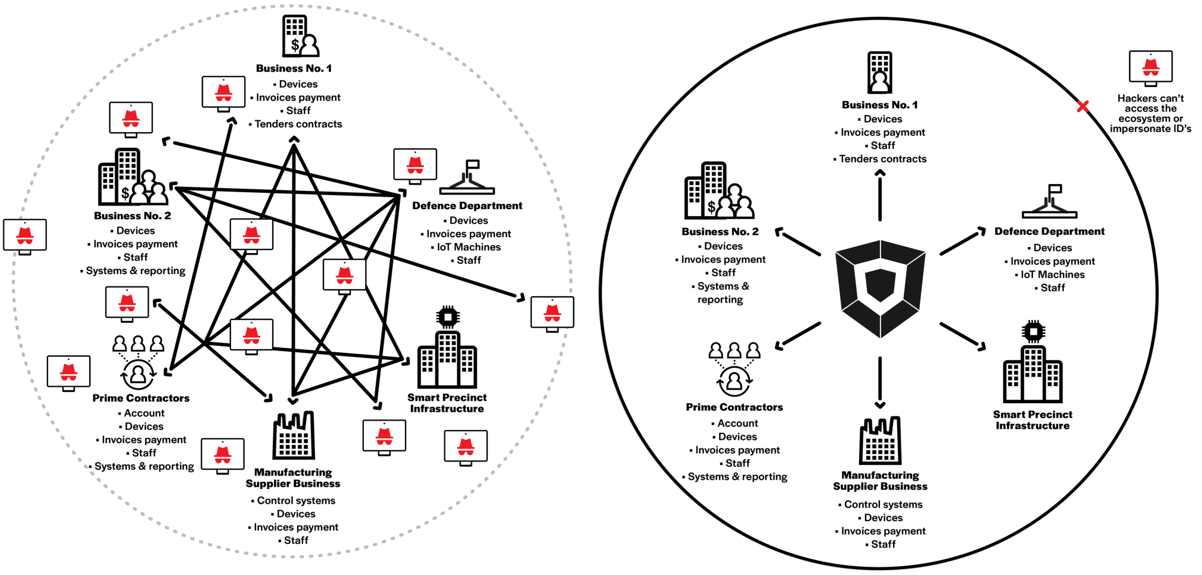
Given how long it can take for a business to detect that an unauthorised user has gained access, once a bad actor has successfully infiltrated an organisation's systems, the hacker can sit undetected watching email traffic and moving laterally within the environment. Often the attacker's target is not the business itself, but its suppliers and customers. Hackers learn the business cycles and approval processes, and then strike quickly by sending what appears to be legitimate emails from a user's accounts to request recent invoices are paid to a new bank account. This same methodology can also be used to request design, manufacturing or pipeline data, where the intent is to disrupt manufacturing or order cycles to enable competition to enter markets. Whether it is redirecting payments, or corporate espionage, the impact to upstream businesses can be steep and extremely costly. business the actual targets. What this translates to is that the new security perimeter for business is extended to your partners and suppliers.

This is exacerbated further when businesses are working on sensitive government contracts, SME's are often dissuaded from bidding due to the increased risks of being targeted for nation state attacks. It is acknowledged across the defence industry that there are clear barriers for SME's to raise their security capability, posture and resilience, and a significant proportion are losing growth and additional contract opportunities. SME's often find the security solutions required to meet defence standards are cost prohibitive, or they are required to duplicate their security platforms to work with large prime contractors who have their own enterprise IT systems. Add to this the shortage of security/IT expertise for SME's to engage, and the combination becomes a major deterrent for SME's to bid for government contracts.

The Solution

A single secure business identifier will make it easier, safer and less costly to do business by creating a secure platform to enable businesses to open, never before seen levels of integration and trust. VeroGuard's Secure Digital ID platform can enable large businesses to set up a simple process to verify and manage business partners and provide an online environment for unparalleled collaboration. The creation of this "Trusted Ecosystem" will allow a business to access secure online shared storage, secure email, and the potential for an integrated Procure-to-Pay environment between stakeholders eliminating phishing risks. This ecosystem would provide savings to all parties through productivity gains due to a reduction of double handling, with the

VeroGuard transforms disparate business networks into a single secure ecosystem



ongoing savings in elimination of invoice fraud and the ease of secure collaboration.

VeroGuard is a re-useable platform with universal and unified access for secure single identity access to non-repudiable and encrypted communications for partnering on tenders, collaboration, proposals, billing and payments. Delivering businesses substantial productivity gains via an Australian made and a global leading secure and trusted platform.

A Trusted Industry Ecosystem

Deployment of a "Digital Business ID" will enable the creation of a "Trusted Ecosystem", which would provide many benefits for large organisations and the businesses with who they partner; including promoting engagement and collaboration; the ability to securely share documents, data and classified project details, and a secure email service.

The VeroGuard platform can provide this environment and enable verification of businesses prior to issuing them with a secure digital ID, meaning that members can rest assured that any collaboration within the ecosystem is with verified members, and that emails via the secure mailbox are from a trusted source.

The VeroGuard platform serves as the exchange that enables secure collaboration amongst members of the ecosystem creating a "Trusted Network" and lowers costs by providing universal resources such as Digital Identity (VeroCard), ultra-secure Cloud Storage (VeroVault) and enables the re-use of profiles to automate procurement processes.

Better access:
VeroGuard's platform enables secure access to systems on any device, over any network, busting down security silos creating barriers to system access.

Seamless service delivery:
VeroGuard's Digital ID allows a true 'tell us once' environment to be built, with the user in control of who gets access to their personal or business information.

A connected government:
VeroGuard's unique solution enables cross platform, cross domain and cross enterprise integration, removing the barriers created by current siloed security architecture.

Contemporary architecture:
VeroGuard provides a universal identity architecture enabling the removal of conventional cybersecurity technology approaches necessitating the replication of identity databases across systems, and multiple departmental domains all requiring their own security layers and provides the security of private bank networks.

Why VeroGuard is Unique

- **The only solution to use HSM to HSM security levels across the internet for Identity and Authentication**
  Your identity can't be faked, read or intercepted and transmission is hardware encrypted secure. Only VeroGuard offers this level of security for every user or machine.
- **Re-usable single Identity for all parts of the ecosystem.**
  Other solutions are specific to the organisation issuing the identity e.g.: "Organisation 1" may have a specific access and ID approach for their portal, but another business can't use that identity when trying to work on another collaboration with "Organisation 2". Duplication occurs. VeroGuard provides a re-usable ID that can connect in with existing systems of Business, Enterprise and Government.
- **Trusted X-Platform Communications**
  We enable business to business level exchanges in milliseconds.
- **Secure end to end cloud service**
- **Machine to Machine level trust**
  VeroGuard is applying its unique security to smart infrastructure and can establish unbreakable communications between devices, servers, machinery.
- **Other services enabled by trusted way to connect**
  Replace manual invoicing and payments with eInvoicing. Connect (APIs) ERP software to VeroGuard and instantly enable automation of invoicing/payments between trusted parties. This eliminates the likelihood of fraud and increases velocity of cashflow between suppliers. Other services like reporting on supply may also be automated.

What has VeroGuard Systems Developed?

VeroGuard has developed a solution to the problem of not knowing who or what is at the other end of an online transaction, and therefore the authenticity of the interrogation, communication and associated data. VeroGuard provides this surety via a non-repudiable Digital ID and authentication platform, capable of irrefutably identifying humans or machines – making it applicable to any online interaction. VeroGuard combines this non-repudiable ID with hardware encrypted protection for data in transit and at rest in the cloud.

VeroGuard provides a single gesture, out of band, multi-factor authentication solution based on existing proven bank to bank protocols applied as a first of its kind to the cloud and can provide hardware encrypted and verified security access across platforms regardless of device, network or location.

VeroGuard's system can provide the necessary infrastructure to extend protection to any organisation, secure communication between parties, create a trusted environment and reduce incidence of attacks based on identity or credential loss.

The VeroGuard solution has three main elements:

1. **Portable non-repudiable Digital Identity that is unified, universal and irrefutable**. A single platform that authenticates people and/or machines over the internet using ATM authentication and bank to bank level communications.
2. **Ultra-secure cloud communications** combined with simple API's to enable hyper convergence for online services.
3. **Ultra-secure storage**. VeroGuard has partnered with Data61 (CSIRO) to secure data at rest in the cloud, to take cloud data protection to above protected levels leveraging a multi-server splitter and the non-repudiable identity of the actors.

How does VeroGuard address Cyber Security issues?

Solution	Benefit	Issues Addressed	Online Security	IoT Security
Portable non-repudiable Digital Identity	A single platform providing Unified, Universal and Irrefutable Identification	**Prevention** Bad Actors cannot enter a system. Phishing attacks are eliminated **Universal** Identity unified at the user – not the system	Guarantees identity of person authenticating to an application with bank to bank level security	Guarantees identity of machines on your network with bank to bank level security, encrypts data between device and systems
Ultra-secure cloud communications	Simple API's to enable integration of any online service	Enables hyper convergence for online services, as the identity layer is already catered for	Guarantees data transmission is secure and ensures communications can only take place by verified actors.	
Ultra-secure storage	Lifts cloud data protection to a completely new level (above protected)	Data at rest is not subject to being accessed by a single attack.	Files are split across multiple storage solutions and each component is encrypted, meaning multiple successful attacks would need to be accomplished.	

What are the components of the VeroGuard Solution?

VeroGuard is a unique technology that enables online authentication and encrypted transmission across fixed and mobile networks with same level of identity security as the ATM network. VeroGuard delivers non-repudiable secure open internet-based login which can be integrated into any environment. It has proven significant defensive security using multiple layers, an anchored ID and multi-factor authentication for best of breed digital identity verification.

The VeroGuard platform serves as a central exchange enabling authentication of users and devices online. Once authenticated ultra-secure communications and storage create trusted member ecosystems, opening new possibilities for collaboration amongst members. The core components of the solution are:

VeroGuard: The central platform providing HSM to HSM level authentication, interoperability and switching services, managing the verification of identity, multi-factor authentication and secure VPN to secure shared services such as cloud storage and email. VeroGuard, protecting and verifying end points, applications, communications and data with hardware encryption and encrypted packet splitting.

VeroCard: An HSM level Digital Wallet for users to manage secure identity access, authentication and transmission. This card is tamper-proof and designed to connect to Bluetooth devices on any operating system. If lost, the card has no accessible data contained and can be remotely disabled.

The VeroCard has been developed to be the ultimate in personal security of the most precious personal details as well as protection of all online activity. VeroCard is the personal hardware that enables the VeroGuard system, providing personal ID security and privacy control, it is a credit card sized tamper proof "Black Box"[1] Bluetooth device. VeroCard is easy to set up and easy to use, access websites, applications, cloud storage or payment systems through a secure server, with real-time authentication.

VeroMod: HSM level embedded Digital ID and encryption for Machine to Machine interfaces. It is a secure digital identity that can be embedded into IoT connectivity to irrefutably identify the device and provide encryption for the data. VeroMod can be embedded into devices or connected in-line and in conjunction with VeroGuard which provides HSM to HSM authentication and verification of device identity. The VeroMod can be used to secure any type of device and handles the processing load for cryptographic calculations meaning the IoT devices are not impacted by the security workload. Connects and protects regardless of network connectivity including RJ, CAT, Cellular (2/3 /4/or 5G) WiFi, BPL/PLC.

VeroVault is first of its kind and best in class Secure Cloud Storage, Retrieval, Sharing and Collaboration for Documents and Data.

VeroVault seamlessly leverages multiple existing best in class storage providers by splitting data into encrypted packets and storing them across multiple providers and locations. These include Amazon Cloud Storage with AWS, Microsoft Azure Storage, Google Cloud Storage, IBM Cloud Storage, etc… This provides benefits such as:

- Data Store and Retrieve Striping
- Higher Data Security by distributing storage with hardware-based encryption
- Easily add or remove suppliers

Stored Data is also secured by encrypting using a Hardware HSM with each Data Packet encrypted using best practice AES under Elliptic Curve encryption.

Users can only access VeroVault via VeroGuard using their VeroCards, affording the highest level of secure, traceable, and un-repudiable identification-based authentication.

VeroVault gives businesses and users sharing, collaboration and secure email in an unparalleled secure cloud storage experience.

[1] "Black box" security refers to devices which contain Hardware Security Modules (HSM) and encrypt communications based on processes where the security keys are maintained within hardware that safeguards and manages digital keys for strong authentication.

Extended solution

VeroGuard delivers unified, universal digital identity that can be re-used and recognised without extra infrastructure for multiple applications including systems access, physical building security, secure document transfer, authorisation of transactions and payments.

The VeroCard is a credit card sized device, secured with a PIN, that you can use to manage your digital identity through the secure VeroGuard system. When used as a Digital Wallet it has the capacity to store more than 100 cards securely within its tamper proof black box.

VeroCard could be used as both your business (authenticate onto your corporate network) and personal ID (authenticate onto your personal email, government websites, banking and online shopping).

It could be used to store important identity information such as digital driver's licences, other licences or permits and frequent flyer cards. Enter your payment cards into your VeroCard and use it to tap-and-go and pay online – especially with real Debit online.

VeroCard is a full EFTPOS certifiable device (ISO 8583/AS 2805 and PCI PTS 5 and above), and as such can receive payments from any financial regulators participating cards (tap and PIN)

The best part? VeroCard provides real-time authorisation notifications — so if someone tries to use your bank or credit cards, or to log in to a site using your details, you simply don't enter the authorising PIN, with this system you are totally protected against unauthorised use.

VeroCard is totally secure:

- ✓ Uses a single unique pin.
- ✓ Can't be skimmed, can't be tampered with.
- ✓ Locks out anyone who doesn't know the pin.

The opportunity exists to establish a globally leading Industry Capability Infrastructure in the form of a secure and trusted distributed platform that will provide:

- Business the ability to securely access government platforms with their unique Digital ID
- One place to securely store corporate profiles and information, easy to update and re-use in other processes;
- Business the ability to engage and collaborate securely with each other;
- Secure email between business and government – to eliminate many cyber risks;
- Secure virtual viewing of stored documents;
- Protection of operations via end to end HSM level of cyber security & identity;
- A platform to be reused for future growth, opportunity and prosperity

Why is VGS a revolution in Online and IoT Security?

Feature	Benefit	Description
Hardware Encryption	Private keys and are never exposed to software where they can be harvested or broken by malware or applications.	HSM to HSM encryption for communications based on processes where the security keys are maintained within hardware that safeguards and manages digital keys for strong authentication. This methodology means that the encryption can't be broken or associated if intercepted. Devices are tamper-resistanrt and provide out of band multifactor authentication with a single gesture.
Hardware Token with Single Gesture, Multifactor, Out-of Band Authentication	Provides a separate layer of security for the strongest possible authentication. The VeroCard provides this solution seamlessly for each login with the user only required to enter their PIN. □ Uses a single unique pin. □ Can't be skimmed, can't be tampered with. □ Locks out anyone who doesn't know the pin.	Out-of-band refers to authentication that requires a verification method through a separate channel.
Portable	Can be used to authenticate access to any online system or encrypt communications end to end between devices.	VeroGuard is a single platform that authenticates people and machines over the internet using bank to bank level security. An ID is anchored to the user and verified on a separate identity solution, enabling the Digital ID to be re-used for any system you wish to bring online, or keep terrestrial.
Ultra-Security	No meaningful data is associated with identity captured or sent, and there is NO KNOWN SOURCE OF THE KEYS.	Keys are stored in Hardware Security Modules (HSM) and never exposed to software, providing ATM like authentication which cannot be broken or associated if intercepted. New key pairs can be exchanged with EVERY transaction..
Flexibility / Interoperability	Any OS, any device, any system	VeroGuard is agnostic to operating system and device types allowing enabled devices and associated servers the ability to participate without significant changes to applications.
Identity Guarantee:	Know who is at the 'other end'	VeroGuard uses a non-repudiable, out of band, multi factor means of authentication which can be applied to both machines and humans and makes every authentication verified.
Information protection:	Ultra-Secure encrypted tunnels and cloud storage	VeroGuard can provide an encrypted tunnel for communications irrelevant of the carriage. VeroGuard provides the most secure, unbreakable cloud storage solution available but able to be applied to existing services.
Low Cost	Low cost solution, and can remove the need for other identity solution and integrations	
Scalable	A single Digital ID is reusable across any online platform.	
Reduces Complexity	Removes the complexity of building security into digital platforms	

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