

# MIMOS Technologies Handbook

Second Edition

Take advantage of homegrown i n n o v a t i o n s !





# **MIMOS Technologies Handbook**

Second Edition



## How this Handbook is organised

Huge amounts of data are generated daily by ICT devices such as computers, tablets and even data centres. How do we make sense of all this data?

MIMOS focuses on Data-centred Technologies that are segmented into key areas shown in the Contents section of this Handbook. The overview and application of each technology are shown in quick 2-page views.

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Second Edition: June 2012

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## Overview: MIMOS Technologies

At MIMOS, Malaysia's National R&D Centre in ICT, creation takes place on compelling next generation ICT that are usable, reliable and sustainable in everyday business. Focused collaborative applied research meticulously designed into the DNA of each platform, product and solution ensure that they perform and endure in any setting and continue to spur and support existing business growth and catalyse the scalability of new green field and existing brown field ventures. MIMOS technologies are developed by 10 research and development labs that collaborate with internationally renowned and accredited research institutes and thoroughly tested in our world-class test lab.







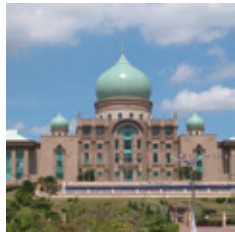
## Transforming Local Enterprises into Globally-Sustainable Entities

Local enterprises who want to experience rapid growth and spread their wings to the world market can approach us for technology licensing or collaboration. MIMOS is active in commercialisation via the following:

- Transfer of technology and subject matter expertise
- Evolve companies from System Integration to Product Development
- Open collaboration with Industry in technology development

## **Commercialisation: 5 Verticals**

To truly quench the local market's palate, MIMOS focuses on 5 targeted market segments, namely Government, Education, Agriculture, Healthcare and Communications. These focus markets allow each segment's requirements to be understood and help nail down the issue-at-hand, drill down to what's important and address how best technology can boost the nation's progress and create sustainable businesses and operations.



**Government**



**Education**



**Agriculture**



**Healthcare**



**Communications**



## Global Convergence Framework

The synthesis of our plethora of technologies is done by stitching together core platforms, products and solutions that benefit our partners.

Our global taskforce uses precisely this synthesis to help local companies to go global by the team's know-how of the international network of technologies. The reach of MIMOS' partners is only as limited as the Internet cloud.



## Mi-MSCAN: Wireless Sensor Network (WSN)

Sustainable development and production of agricultural and farm produce, without having to spend excessive time in fields or farms, are of vast importance to corporations. Mi-MSCAN (MEMS Wireless Embedded Sensing, Control, Access and Networking) consists of MEMS (microelectromechanical systems) Sensors; Mote, Router, Gateway and Daisy Chain; and Precision Agriculture Management System (PAMS). These three technologies work in harmony to collect data from the field, seamlessly relay the data and display crucial data for end users to make decisions on their field.

The features of Mi-MSCAN are as follows:

- **MEMS Sensors** – These sensors are based on MIMOS' MEMS platforms. With their small form factor and reliability, these sensors display accurate multisensory capabilities to detect and collect environment data. MEMS Sensors comprise temperature, micro temperature, humidity, electrical conductivity, moisture and pH with more in under development (integrated temperature and pH; integrated temperature, nitrate (N), phosphate (P) and potassium (K)).
- **Mote, Router, Gateway and Daisy Chain** – These components work together to create real-time remote monitoring capabilities with low power consumption, eliminating the need to be present at any field site.
- **PAMS** – PAMS allows online 24/7 viewing of field sensor data such as environment data, thresholds, alerts, network health and generates charts and reports of the data. Therefore, real environmental monitoring can be done from anywhere in the world at any time.



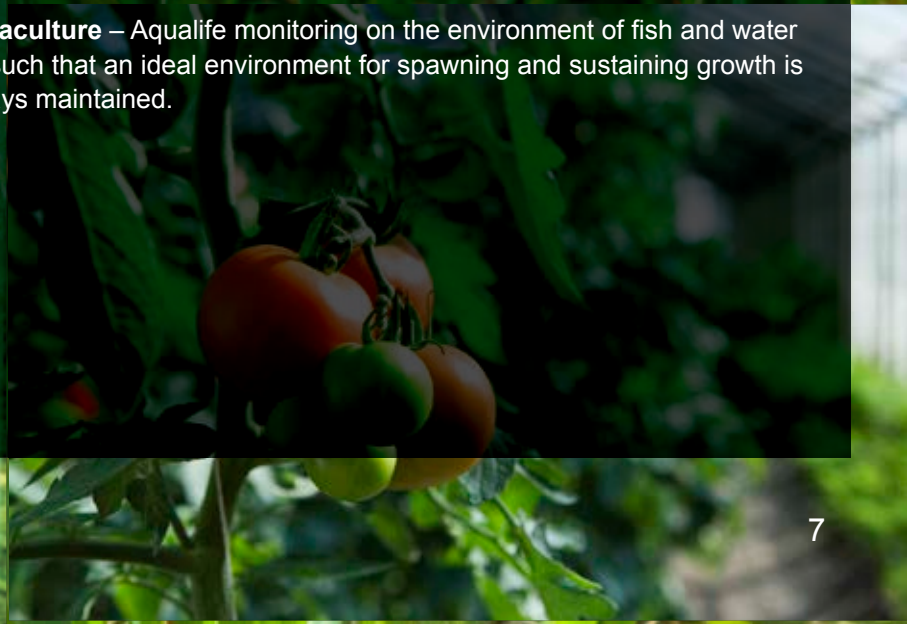




## Applications

Mi-MSCAN is designed with such flexibility that it is deployable in various configurations for a variety of applications such as intelligent crop monitoring and other areas such as telemetry and mechanisation. Some of the applications of Mi-MSCAN are:

- **Controlled Environment Farms** – Greenhouse Management System for food crops, herbs and floriculture to increase growth and yield, and reduce wastage and cost.
- **Plantations** – Crop alert systems for commodity crops such as oil palm where pollination time and the health of each plant is monitored, thereby reducing manual labour to perform these tasks.
- **Aquaculture** – Aqualife monitoring on the environment of fish and water life such that an ideal environment for spawning and sustaining growth is always maintained.









## Applications

With the SOA framework, Mi-Semantic can support the development of various kinds of intelligent applications that interface via the W3C web service standard. Some of the many applications of Mi-Semantic are:

- **Education Management** – Vertical applications to track student learning performance can be built using the Semantic Assessment Engine and the Semantic Profiling Engine from Mi-Semantic (see Mi-iLMS).
- **Healthcare/Medical/Life Science Management** – Medical records of patients, disease databases, clinical and medical forensics, and new medical discoveries can be structurally organised for future data entry, search and archiving.
- **Risk Management** – Growing finance sectors such as Islamic Banking, can utilise Mi-Semantic in their risk portfolio system for better-informed decisions based on linked knowledge bases. Analysis and extracting of valuable hidden information from unstructured web data creates intelligence. Social Network Analytics provides the ability to navigate, analyse and visualise the social network. Also applicable are graph manipulation operations, filtering mechanisms and visualisation techniques.
- **Intelligent Manufacturing** – In electronics manufacturing, data such as yield, failure, reliability and customer return can be processed in one unified system to help pinpoint root causes and address issues.
- **Enterprise Data, Content and Asset Management** – An enterprise can intelligently monitor data and related content across multiple knowledge base sources using various dashboards to facilitate systematic, easier benchmarking and measurement of performance indicators.



## Mi-iLMS: Interactive Learning and Management

Education is essential especially in this rapid-moving age of IT. Children now are exposed to interactive ways of learning and are no longer confined to the realm of books and tutorial sheets. Mi-iLMS (Intelligent Learning Management System) is an intelligent learning solution based on Mi-Semantic that supports learning content portability through Sharable Content Object Reference Model (SCORM) compliance. Mi-iLMS enhances a student's learning experience via personalised and adaptive learning while education bodies can track and monitor student performance at various stages from student level to state level in a country.

Mi-iLMS has the following features:

- **Student Profiling** – Students can undergo a series of online cognitive assessments to gauge their personalities and learning preferences.
- **Personalised Learning** – Based on the profiling of students, customised learning materials would be created for each student. Subject matter learning experience is enhanced beyond multimedia (kinesthetic) by virtual reality (visual) and augmented reality (auditory) learning materials.
- **Integrated Assessments** – Students are assessed on their learning performance and can gauge their proficiency. This increases the mastering of subject topics according to learning pace.
- **Dashboard Monitoring** – Stakeholder dashboards views are available to track learning performance from students and teachers right up to education officers.





## Applications

Improving the learning experience of any person and at the same time, the power to be able to monitor and control the performance of this is key to any educational or learning institution wanting to benefits its enrollers.

Mi-iLMS can be used by:

- **Schoolchildren and Parents** – Children can pick up subjects taught in schools faster with customised learning material that follow their learning pace and parents can check how their children are doing in school.
- **Teachers and Headmasters** – School administrators can monitor student performance and set each year's study plan and adapt accordingly.
- **State and Federal Officers** – This group of personnel will have a direct high-level view of school and state performance for country education programmes.

## Mi-SP: Ensuring Safe and Secure Environments


Safety and security of premises are paramount to private and public organisations, especially entities with high net worth of physical infrastructure. Conventional security systems, together with an in-house or outsourced security force, ensure this by personnel monitoring hundreds of videos from cameras in the operation room. Personnel are prone to fatigue, lapse of concentration and learning curves. Mi-SP (Intelligent Surveillance Platform) fills this gap by actively acquiring video feeds 24/7 for video analytics to alert users of unusual incidents and potential threats. For organisations, this improves the security level of prized assets ensuring business continuity. It also increases situational awareness and provides insights into business surroundings.

The features of Mi-SP are:

- **High Levels of Detection** – Rigorously designed and tested in various complex environments, indoor and outdoor, achieving high detection rates and low false alarms.
- **Customisable Video Analytics Rules** – Equipped with 10 video analytics rules and more based on user requirements and situations.
- **Standalone or Third Party Integration** – This platform can be deployed with existing video surveillance infrastructure or integrated with third party video management systems.
- **Flexible Installation with IP and Analogue Cameras** – Supports IP cameras and analogue cameras via encoders to suit investment budgets of end users and system integrators.
- **Software-based Technology Platform** – Software-based platform avoids hardware tie-down and supports flexible and affordable deployments.
- **Unlimited Alerts** – Alerts generated by this platform comes in audible alarms, SMS/MMS and e-mail.







## Applications

The uniqueness of Mi-SP is in its video analytics via Web-based Image Acquisition and Display (WIAD) that links all components together from the camera to video processing to the final display on the web browser. Mi-SP can be applied in these areas:

- **Commercial Buildings** – As an example, a telecommunications tower with expensive servers and communication hardware that once hijacked, will cause a huge disruption in a communication delivery network.
- **Government Buildings** – Areas of limited access containing strictly need-to-know secrets of government that are highly-sensitive. Only secured and permitted personnel are allowed to enter these areas and an intrusion would result in a national issue.
- **Public Areas** – In airports, train stations and commuter stations where high traffic flow warrant a sensitive and effective system to be able to catch any threatening incident and alert the authorities to take action before mass hysteria occurs.



## Mi-Dashboard: Enterprise Knowledge Management System

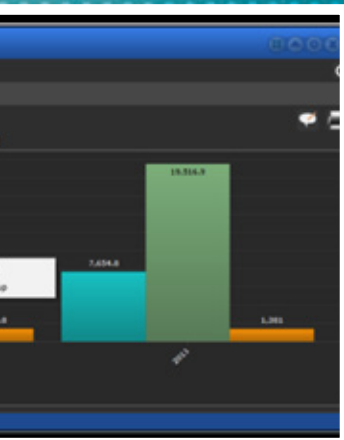
Many a time, we have multitudes of application data for a particular system. For example, an organisation would utilise several different IT platforms and applications, each for their own specialty on a system which comprises different information sources and service providers. It would be more productive to display multiple application data in one single “dashboard” view. Mi-Dashboard is a framework for building integrated knowledge management dashboard solutions. A Mi-Dashboard solution is a Rich Client that displays information from a plurality of sources across the network in the form of independent and configurable widgets on a single interaction point. Mi-Dashboard works as a plug-in to Microsoft Outlook or as an independent Windows Presentation Foundation (WPF) client application.

The following are features of Mi-Dashboard:

- **Widget Concept** – Dynamic dashboards can be created by accessing information via downloading, updating, searching and deleting widgets.
- **Service-Oriented Architecture (SOA) based** – Enhanced interoperability between client, service and server layers via web services.
- **Seamless Interoperability with Various Information Sources** – Information extraction and display from external sources via the Rich Client’s widget layer.
- **Interactive Display** – Intuitive drag-and-drop method and interactive panels powered by Microsoft’s Windows Presentation Foundation (WPF) technology.
- **Intelligent Profiling** – Deploys intelligent methodology to profile users and customise access to widgets.







## Applications

Mi-Dashboard is a Knowledge Management Dashboard Software that typically allows a user – novice or expert – to have multiple application data from different sources and formats in a single view. This effectively manages the clutter on a computer screen while easing access to individual application data. Mi-Dashboard can be applied in the following and more:

- **Government** – Command centre view of each department's data where information search, classification and display are made easy in a single knowledge management system.
- **Healthcare** – Overall view of all hospitals' administrator and user data where access, analysing, management and consolidation of knowledge from a wide variety of medical platforms with differing formats are possible.
- **Education** – Information harnessing from one logical point-of-access via a consolidated view of data and content; this acts as a digital repository accessible to students, lecturers and administrative staff of an educational institute.
- **Financial and Services Sector** – Total view of financial data and accounts management for ease of top management decision-making.



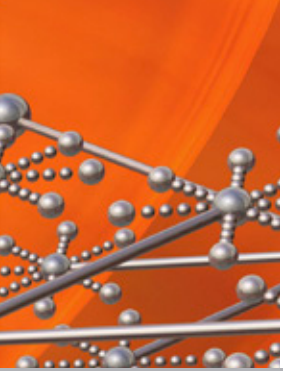
## Mi-I2P: Intelligent Information Analytics

In today's enterprise-driven world, to be in the know gives the edge in business operations. Information is of the essence and a good system helps deliver advice on how to improve business. Mi-I2P (Intelligent Informatics Platform) offers a suite of service-oriented architecture (SOA) based software components. This empowers software developers to build and interoperate business analytics software using programming languages such as Java or .Net. Analytical-based applications enable organisations to rapidly adapt to market changes in productive and cost-effective ways. Mi-I2P has the capability to aggregate information from several external sources and performs decision-making analysis to provide efficient output which enhances daily operations. It acts as an integration platform to stitch existing systems without large investments in building a new one, which provides information to users as a one-stop centre.

Mi-I2P comprises four main groups of components:

- **Decision Support System (DSS) and Enterprise Application Integration (EAI)** – A system that combines data from different sources in a unified view, provides decision support and infers conclusions based on any given problem.
- **Information Retrieval** – Ontology-based categorising, summarising and processing of various information sources.
- **Mobile** – Tools that retrieve mobile information of a given request such as location with text-to-speech capabilities.
- **Common** – Tools for data structuring, web profiling, searching and knowledge handling.





## Applications

With an intelligent tool such as Mi-I2P, business operations will be better informed and stay informed during critical moments of key business game changers. Applications of Mi-I2P are:

- **Vehicle Resource Planning** – Vehicle allocation and fleet management based on inputs such as truck loading, peak/low periods and route information.
- **Fisheries** – Identification of potential fishing zones based on site, weather and other key parameters where these data are able to be seamlessly linked together creating interoperability.
- **Agriculture** – Identification of potential land disorders based on historical land data, current land characteristics and climate conditions in a common shared information platform.
- **EAI for Logistics** – More intuition into a logistics chain by identifying and linking core contributing processes to quicken delivery and improve linkage between process groups.



## Mi-Page: Information at Your Fingertips

The Internet is a vast library of resources that are important to the IT user of today. It is therefore crucial to be able access this information quickly and easily. A common step is to go via a search engine or web browser and manually key in the full URL or search term for an item of interest. This takes time and may be cumbersome for those who have a steep learning curve in IT. Mi-Page (Intelligent Service Delivery Platform) is a user-friendly web-based application that brings a multitude of desired contents and information services available from the Internet direct to the users. It simplifies user access to various services and information on the Internet through icon-based applications. Users can choose from a variety of applications from the application warehouse, MIMOS iBazaar, according to their preference without having to manually key-in web URLs or go through search engines. Mi-Page can be deployed on multiple devices such as desktops, kiosks and mobile gadgets such as tablets.

Mi-Page incorporates the iServe4u portal that comprises:

- **MIMOS iBazaar** – An online application warehouse that houses all services accessible to users.
- **MIMOS iCreator** – An online software development kit that helps application developers create their own services and applications.
- **MIMOS Mi-Clip** – A content aggregation tool that allows a backend engine to automatically grab data and information from the Internet.





## Applications

Mi-Page allows information to be personalised for each user and delivered based on their gender, ethnicity, age and race profile. As it is a software platform, it can be customised to suit different geographical locations and can even fit onto a smart device such as a tablet. Mi-Page can be used in a myriad of applications such as:

- **Kiosk** – A self-help tourist or local community information kiosk with location-tailored information that assists both visitors and locals with common queries of any location instead of having personnel to physically man the information counter.
- **Desktop/Netbook** – An education portal where teaching and learning sites are all stored in a single accessible view with intuitive icons that link to education sites and learning information sources on the Internet.
- **Smart Device** – Customisable views of Mi-Page adds flexibility so users can customise Mi-Page to their liking on their mobile device to bring to them news and articles that they would like to see.



## Mi-Market: e-Marketplace Platform

The conventional way of selling products and household goods is via a physical shop. This incurs a lot of time and effort to set up a shop to sell products to customers. Mi-Market addresses these by providing a web portal platform that promotes trade between buyers and sellers of goods and services. It is an Internet-based commerce infrastructure for all kinds of products encompassing the whole value chain. Retailers, wholesalers, distributors, SMEs, exporters, importers and logistics suppliers can meet and exchange business via this online platform with a quick and easy registration.

Mi-Market features are:

- **e-Buy/Sell/Offer** – Notification of new supplies and supplies response, negotiation and request for quotation, online ordering, upcoming offers/bargains posting.
- **e-Stock Management** – Inventory management, product information updating.
- **e-Payment** – Integration with iPay88 website.
- **e-Support** – Customer information management.
- **e-Info** – Product news, announcements and activities from government agencies, suppliers and so on.
- **Enhanced GUI** – Webpages are designed with better organised information with additional low graphics mode.
- **Tools** – Dashboard that provides management of shoppers and shop owners, virtual assistant and social media links such as Facebook and Twitter.
- **Centralised Information** – Customer service page, directory services, information centre and discussion forums and message facilities.
- **Business Matching** – Virtual matching of suppliers and buyers based on requested products and services.





## Applications

Mi-Market can be used to develop an online marketplace for retailers, suppliers and service providers from any business sector. This highly-customisable portal acts as an online gateway for all parties to meet and do business. Therefore, users can potentially deal with overseas parties without having to physically meet for a specialised service otherwise not available locally. Mi-Market can be customised into online portals such as Halal exchanges and any type of B2C commerce portal.

## Mi-Office: Supply Chain Management Solution

Logistics movement in any Fast-Moving Consumer Goods (FMCG) industry requires thorough Enterprise Resource Planning (ERP) tracking of its goods all the way from factory to end recipient. Currently, companies employ a variety of systems to do this tracking. When these are of many different platforms, this usually results in loss of goods, late delivery or goods that are packaged incorrectly due to supply chain process mismatch. Mi-Office solves the issues of SMEs by connecting business operations for better planning and management of movement of materials, information and funds along the entire value chain via an online supply chain management solution accessible by multiple types of tenants.

Mi-Office features include:

- **Enhanced Collaboration** – Updated information of goods whereabouts and their current process status via Mi-Office web portal and via SMS.
- **Entire Supply Chain View** – An online web browser allows users to view the entire supply chain process that includes purchasing, receiving, production, inventory, marketing and delivery where critical processes can be addressed.
- **Multi-Tenant Solution** – All information from different partners and suppliers in the value chain can be shared and monitored on Mi-Office.
- **Minimised Delays and Reduced Costs** – Product and material inventory status allow for order fulfilment and delivery monitoring reduces cost by accurate forecasting and tracking of goods.
- **Internal Traceability** – Tracking based on batch number and delivery order.







## Applications

With Mi-Office, areas in the supply chain network that require urgent attention can be identified and orders as well as deliveries can be forecasted thereby reducing costs of storing excess raw materials and finished goods. This reduces wastage and improves an enterprise's financial scorecard by being more efficient and responsive towards orders, deliveries and services provided to the customer and its stakeholders. Mi-Office can be applied as follows:

- **FMCG Supply Management** – Overall supply chain view and options for changes, amendments and process owner feedback and review.
- **Raw Material Management** – Tracking of raw material delivery and finished goods status on supply to factories and distribution centres.
- **Work-In-Progress (WIP) Goods Management** – For WIP goods, this system is customisable to track goods/materials that are in transition.



## Mi-laaS: Cloud Infrastructure

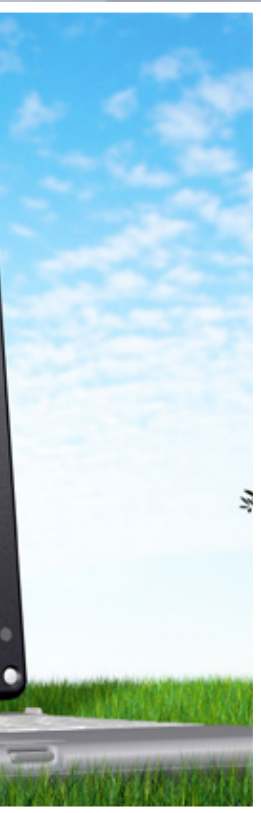
Mi-laaS Secured Cloud solution allows users of cloud services to build their presence in a simple and flexible way minus capital expenditure and leverage on existing operational expenditure. This solution consists of the Infrastructure as a Service (IaaS) platform. It allows complimentary infrastructure to be offered to end users such as rental of computing space and power on the Internet. This platform is non-dependent on any specific cloud hardware or software. Therefore, companies can use Mi-laaS and couple it with software, storage and servers from other various suppliers in the market.

The features of Mi-laaS are:

- **Open and Neutral Architecture** – Mi-laaS platform is built on Open Source Software. Thus, the total cost of ownership can be reduced via cost-effective licensing.
- **MIMOS Patented Security** – Built-in with Mi-laaS is the MIMOS Mi-Trust security technology that protects both Virtual Machines (VM) and IaaS infrastructure.
- **Total Service Orchestration Suite** – The modular design of the Mi-laaS allows it to be easily integratable with other systems and therefore enables customisation by service providers. Health of the cloud is also measurable via cloud health analytics.
- **Hardware Agnostics** – Most enterprise hardware can be used to build this cloud platform. This adds flexibility in deployment, maximises value and reduces risks where a multi-vendor scenario is made possible.



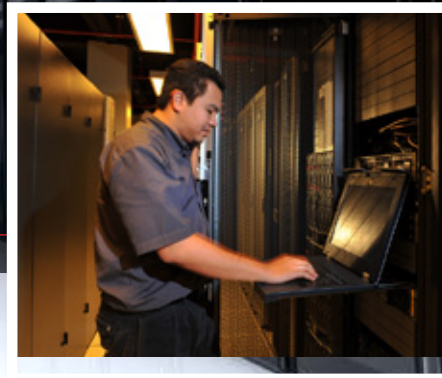
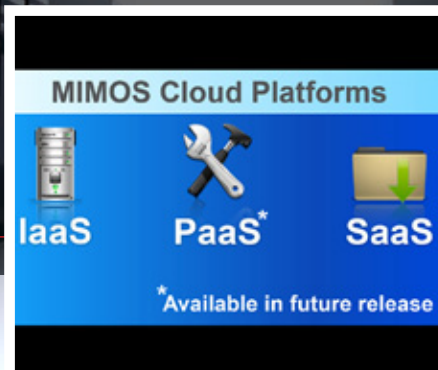




## Applications

IT infrastructure outsourcing is now possible via Mi-IaaS. Hardware such as servers, storage, web hosting, load balancing and even disaster recovery are all available on the Internet cloud and ready for subscription on a as-needed basis by clients for a minimal utility fee. IT infrastructure managing and maintenance is much easier with its comprehensive and expandable platform. The following are applications of this technology:

- **Service Providers** – Companies who wish to offer infrastructure to end clients i.e. servers, IT equipment, storage solutions and so on can now host these offerings on their websites.
- **Large Conglomerates** – Enterprises who wish to maintain competitiveness in the ever-changing IT landscape can use Mi-IaaS to add to their existing product offering.
- **Other MIMOS Cloud Platforms** – Platform as a Service (Mi-PaaS) for building cloud platform solutions and Software as a Service (Mi-SaaS) for building cloud software solutions.

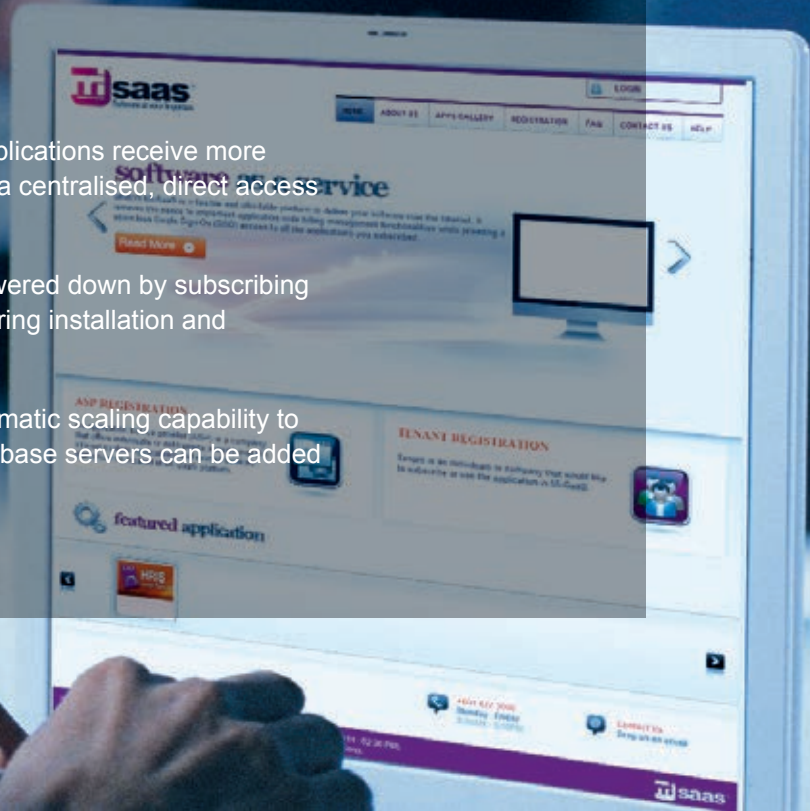


## Mi-SaaS: Software at Your Fingertips

The rapid expansion of the Internet and increase in broadband speed has allowed computing power, database storage and specialised business applications to be hosted by worldwide data centres and offered to enterprises. Mi-SaaS is MIMOS' Software as a Service Platform that allows software applications to be delivered over the Internet to end users on a subscription-based system. End users only require the Internet to access software thereby reducing software and hardware installation and maintenance costs. Service providers also benefit from easier servicing and maintenance without having to be on-site and supporting updates via the Internet.

The following are qualities of Mi-SaaS:

- **Accelerated Updates** – Users of Mi-SaaS applications receive more software updates than traditional software via a centralised, direct access from the provider.
- **Competitive Advantage** – IT costs can be lowered down by subscribing to applications on Mi-SaaS therefore not requiring installation and maintenance of software and servers.
- **Ease of Maintenance** – Mi-SaaS has an automatic scaling capability to manage the loading on servers and more database servers can be added as required.







## Mi-WiWi: Beyond Connectivity

Every service provider aims to enrich Internet Broadband Access throughout the entire population enabling wireless Internet and IT services to customers, if possible, for free. Unfortunately, many solutions in the market require high cost of deployment, may not be compatible with existing infrastructure and only provide standard connectivity.

Mi-WiWi Outdoor Access Device provides a complete range of products based on modular designs to cater for comprehensive solutions from a simple WiFi Hotspot to a complex metropolitan network (Metronet). The modular design provides flexibility in the choice of wired or wireless (WiFi, WiMAX, HSDPA; and in the future, LTE), provides for outdoor deployment with its robust design and has been deployed over 250 sites nationwide.

Mi-WiWi is integratable with existing telecommunications infrastructure and has features such as:

- **Water and Dust-Proof** – These features of the Mi-WiWi ensure that the access device survives harsh environment conditions and delivers distortion-free Internet access.
- **Modular Plug-and-Play** – Users can directly access the Internet via Mi-WiWi by simply connecting to its Hotspot. For ISPs, this access device supports fixed DSL, 3G, WiFi and WiMAX.
- **Enable Value-Added Services** – Multicasting and IPv6 provide end users with fast streaming features of wireless IPTV, localised content or advertising, surveillance services and local community VoIP communication; generating additional sources of revenue and value to ISPs and end users.
- **WeMS and OTA** – Mi-WiWi Element Management System (WeMS) and Over-The-Air (OTA) System Provisioning technology allow centralised device administration and updating of software releases for all access devices and related devices within the network without having to physically upgrade each unit manually.



## Applications

Mi-WiWi is able to extend enterprise Internet access, local IPTV applications, local community web access and service packages to new and existing customers because of its ease of setup and affordable cost of deployment. Mi-WiWi can be applied to provide wireless Internet access in these areas:

- **Residential** – Broadband in housing neighbourhoods or personal home broadband such as Kampung WiFi, which has been deployed nationwide.
- **Commercial** – Free Internet in a shopping complex, coffee shop or campus such as Municipal WiFi in Melaka.
- **Vertical** – Internal wireless network in a large company for surveillance, meter reading, sensor reading, port management or transportation.
- **SME** – Free Internet access to employees of a campus or enterprise, or WiFi Internet services for a region.



### Mi-WiWi Outdoor Access Device Models

Mi-WiWi comes in the following variant groups to suit your service environment

#### Hotspot (small communities)

- Mi-WiWi AP
- Mi-WiWi Enterprise
- Mi-WiWi HybridWiMAX
- Mi-WiWi HybridHSDPA
- Mi-WiWi HybridLTE\*

#### Hotzone (municipalities)

- Mi-WiWi Relay
- Mi-WiWi Mesh

#### Metronet (metropolitan areas)

- Mi-WiWi PTP (5GHz) (Device-To-Device)
- Mi-WiWi Bridge (5GHz/2.4GHz)
- Mi-WiWi Multimesh\*

\*Available in future release

## Mi-Tablet: Multitouch Mobility

Affordable and easy access to information is vital to shorten the learning curve in this information age where we are surrounded by the Internet of Things. MIMOS has created a multitouch tablet PC to offer more mobility to users where regular laptops become impractical or cumbersome. It runs on Microsoft Windows 7 (with an Android option) and is equipped with Mi-Page (Intelligent Service Delivery Platform).

The following features define Mi-Tablet:

- **Mobility Redefined** – Thin, compact and light form factor redefines “total mobility” for easy handling in a fast-moving mobile environment.
- **Simple Navigation** – Multitouch input replacing the keyboard and mouse with an additional stylus.
- **Service Access** – Preinstalled Mi-Page allows easy access to various Internet services and portals.





## Applications

Mi-Tablet can be used as an information search and input device for users on the go. It is able to fit into a variety of applications from the commercial scenario to government institutions. Some applications are as follows:

- **Medical** – Nurses and doctors who frequently move around hospital premises can quickly key-in data and attend to patients promptly.
- **Education** – School-going children can use Mi-Tablet as a tool to easily access learning applications.
- **Government** – Staff of such institutions need not rely solely on desktops and laptops, and have the mobility offered by a tablet PC.
- **Commercial** – Restaurants and shops can offer Mi-Tablet as an input and selection device to customers looking for a more hi-tech experience.

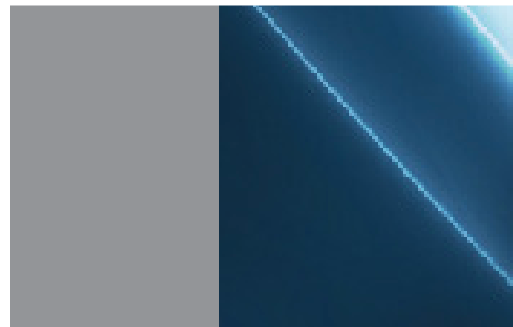
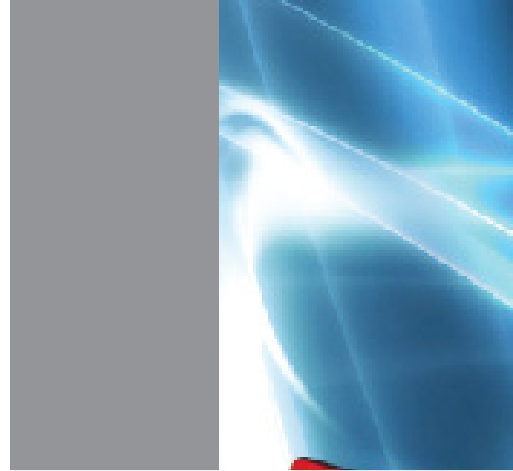


## Mi-Netbook: Portable Computing

Digital literacy and knowledge of ICT is essential in these modern times. Everyone should be equipped with computing skills, from school-going children right up to working adults. For those who prefer a more traditional approach to using a laptop but with size portability, MIMOS introduces a netbook equipped with e-learning and educational software. Similar to its tablet sibling, Mi-Netbook runs on Microsoft Windows 7 powered by Intel's Atom Processor and equipped with Mi-Page (Intelligent Service Delivery Platform).

The following features define Mi-Netbook:

- **Easy Mobility** – The compact and lightweight design of Mi-Netbook as well as WiFi and LAN connectivity makes it hassle-free for anyone to use it anywhere.
- **Microsoft Student Innovation Suite** – Educational software suite that includes Microsoft Office Home and Student, Microsoft Math and more.
- **Digital Literacy Standard Curriculum** – E-learning modules comprising computing basics, Internet and software usage.
- **Performance Factor** – Mi-Netbook runs on Windows 7 and Intel's Atom Processor, with storage up to 320GB.
- **Service Access** – Preinstalled Mi-Page allows easy access to various Internet services and portals.





## Applications

Mi-Netbook is a fitting solution for those wanting to pick up essential skills on using a portable computer as well as the Internet. Some potential areas where Mi-Netbook can be applied are:

- **Education** – School-going children can use Mi-Netbook as a tool to learn computing basics and easily access the Internet and learning applications.
- **Community** – Communities who want to enhance their IT literacy and increase computer and Internet usage.
- **Government** – Staff of such institutions can continue to upgrade computing skills and experience the mobility of a netbook.



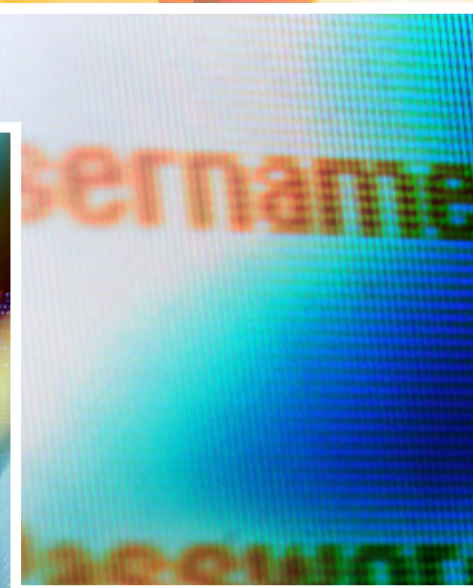


## Mi-Secure: Security Platform Suites

Understanding the most common vulnerabilities associated with application security is vital. Common vulnerabilities involve loss of productivity, non-compliance to regulation, loss of access, stolen information and unauthorised use of confidential information. Mi-Secure (Managed Security Platform and Services) secures information at every level of data storage (data-at-rest), data access (data-in-use) and data transfer (data-in-motion). It employs 256-bit Advanced Encryption Standard (AES) block cipher encryption and digital signature using certificates.

Five software suites are included in Mi-Secure for developers to build secured applications:

- **Package A: Encryption Application Security (EAS) Suite**  
Encrypts data as it travels between applications.
- **Package B: Application Identity Access Suite (AIDA) Suite**  
Authenticates users with multiple methods of tokens such as smartcard, pin and SMS.
- **Package C: Data Audit Application Security (DAAS) Suite**  
Manages logs to identify security events and write-controlled incidents.
- **Package D: Encryption Data Security - Windows (EDS<sub>w</sub>) Suite**  
Self-encrypts files, folders and disk-level for Windows environment.
- **Package E: Encryption Data Security - Linux (EDS<sub>L</sub>) Suite**  
Self-encrypts files, folders and disk-level for Linux environment.



## Authentication



The background of the slide is a blurred image of a computer screen. It shows a login interface with two rows of asterisks for passwords and a 'log on' button at the bottom. In the bottom-left corner, there is a small inset showing a USB security token icon.

## Applications

Mi-Secure simplifies all web application programming efforts such that consideration of various built-in security elements is designed right from the start. The suites are flexible such that mixing and matching is possible according to requirements, and required level of security and features. More software suites shall be available soon and the features in each suite shall be enhanced to cater to the fast-moving trends of information and data. Mi-Secure can be applied in Government and Enterprise sectors.

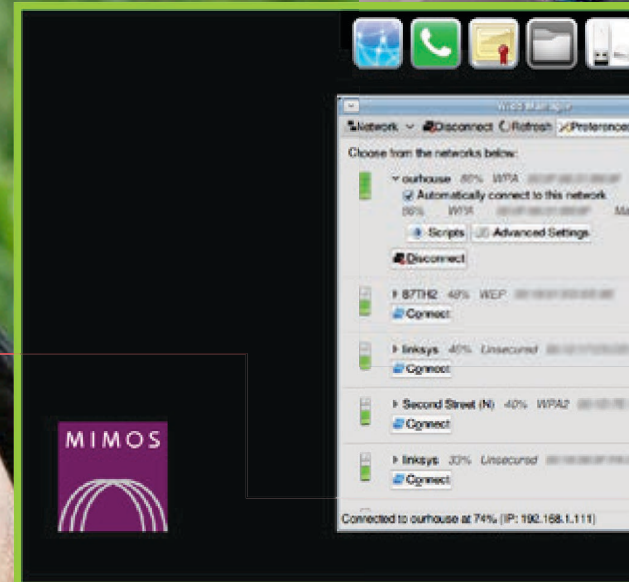


## Mi-Trust: Trusted Platform

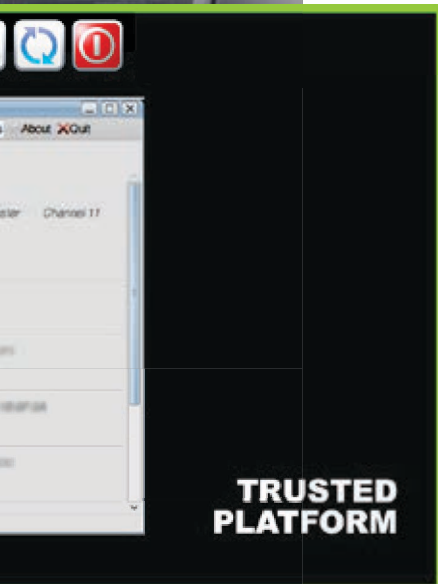
High value data must be thoroughly protected by a comprehensive system comprising software and hardware solutions especially in this day and age of cloud computing. Mi-Trust is an integrity measurement software and pre-built security layer within an operating system that supports the client PC, cloud and server. Ongoing Internet threats such as phishing, pharming and malware vulnerabilities can sneak into any IT system without the user's or administrator's knowledge. To address this concern, Mi-Trust provides a secured computing environment to ensure the safe transfer and storage of information. This technology utilises NBvTPM security software component based on TPM (Trusted Platform Module) microchip embedded into IT hardware that stores cryptographic keys.

Mi-Trust features are as follows:

- **NBvTPM** – This security component measures the integrity of the virtual machine (VM) configuration. It creates a trusted environment. Remote attestation protocol is used to verify system credentials.
- **TPM** – The TPM chip has unique and secret cryptographic keys embedded that enables third party applications. This chip complies with specifications issued by the Trusted Computing Group (TCG).







## Applications

Mi-Trust creates trustworthiness of a software environment. File and application hashing can be verified against a baseline. This is to monitor any unauthorised tampering of applications. Mi-Trust can be applied to create trusted environments through the following:

- **Mi-Trust Series Client** – Kernel-based for client physical PC
- **Mi-Trust Series Cloud** – Cloud-based for cloud virtual machine
- **Mi-Trust Series Server** – Server-based with features such as centralised key management and client machine attestation on desktop/browser
- **Mi-Trust Series Token** – Token-based for mobile devices such as thumbdrives and laptops

Mi-Trust can be applied in Government and Enterprise sectors.

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### Interested in MIMOS Technologies?

MIMOS always believes in sharing the latest practicable technologies with aspiring business and technology players and research institutes to help grow novel ideas and apply them in the field. Our local and international network of universities, research institutes, industries and the Government provide an open collaboration ecosystem to help partners move with the right technology all the way to completion. Please contact us at the following:

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For Commercialisation enquiries: [market@mimos.my](mailto:market@mimos.my)





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## MIMOS – SCALABLE ICT

At MIMOS, our innovations are customisable and integratable into core business and information systems. Whether there is a need for an entirely new system or simply to include additional features into an existing one, our flexible and robust solutions will fit into most enterprises.