



KONICA MINOLTA

RETHINK MANUFACTURING



Giving Shape to Ideas

KONICA MINOLTA DIGITAL MANUFACTURING PORTFOLIO



WORKPLACE HUB

Workplace Hub is an innovative new enterprise IT solution that unifies all of an organisation's technology via a single centralised platform. It is designed to future-proof workplaces of every size as they work towards digital transformation and directly addresses growing IT complexity by providing more efficient and effective management.

ADDITIVE MANUFACTURING

Konica Minolta 3D Printer brings the power of prototyping with professional level 3D printing to the desktop. Using advanced stereolithography technology, the Form 2's powerful laser is capable of producing smooth prints with spectacular detail. Our library of versatile, reliable engineering resins is formulated to help you reduce costs, iterate faster, and bring better experiences to the market.

COLOUR & GLOSS MEASUREMENT

Konica Minolta optical technology that provides colour and gloss measuring solutions to support manufacturers in their processes from R&D to QA/QC for incoming materials and outgoing products. Manufacturers can check colour and gloss. Both final products and mold cavity texture are checked to ensure that quality is met to the specifications.

MOLD ASSET MANAGEMENT

Mold Asset Management allows manufacturers to manage the life cycle of their mold and machines including maintenance cycles and allows for timely maintenance and improves maintenance efficiency and production time. With the inspection application, automated and digitised inspection can be achieved and in turn increases inspection reliability.

CONNECTED FACTORY - SMART START PACKAGE

A pre-configured and quickly deployable IIoT solution for small and medium-sized enterprises. The solution contains the basic components (hardware, software and service) required to reach a higher level of digitalisation in your existing production environment within a very short period and without affecting running operations.

ADVANCED MANUFACTURING EXECUTION SYSTEM (AMES)

Konica Minolta's AMES system connects, monitors and controls manufacturing processes and data flow on the factory floor. Using this solution, factories are able to manage workforce, equipment and resources in real-time, and at the same time integrate with existing software systems through various databases and IIoT sensors.

ROBOTIC PROCESS AUTOMATION (RPA)

With RPA, manufacturers are able overcome pain points in their crucial back office operations by having a virtual workforce to perform those manual, repetitive, high-volume and rule-based business processes. As a result, it will improve the productivity and enables the manufacturers to be more agile in their operations.

AI VISUAL INSPECTION

AI Visual Inspection Solution detects product appearance defects by supervising a small amount of image data. Data accumulation allows for defect record analysis. This realises automatic visual inspection and reduces reliance on human skills.

AUTONOMOUS MOBILE ROBOTS

Among the digital manufacturing offerings, Konica Minolta promotes autonomous robotics to steer productivity in manufacturing and logistics. The autonomous robot is collaborative and with high interoperability—ideal for co-existing with other operations and for integration with manufacturing execution system (MES) and warehouse management system (WMS).

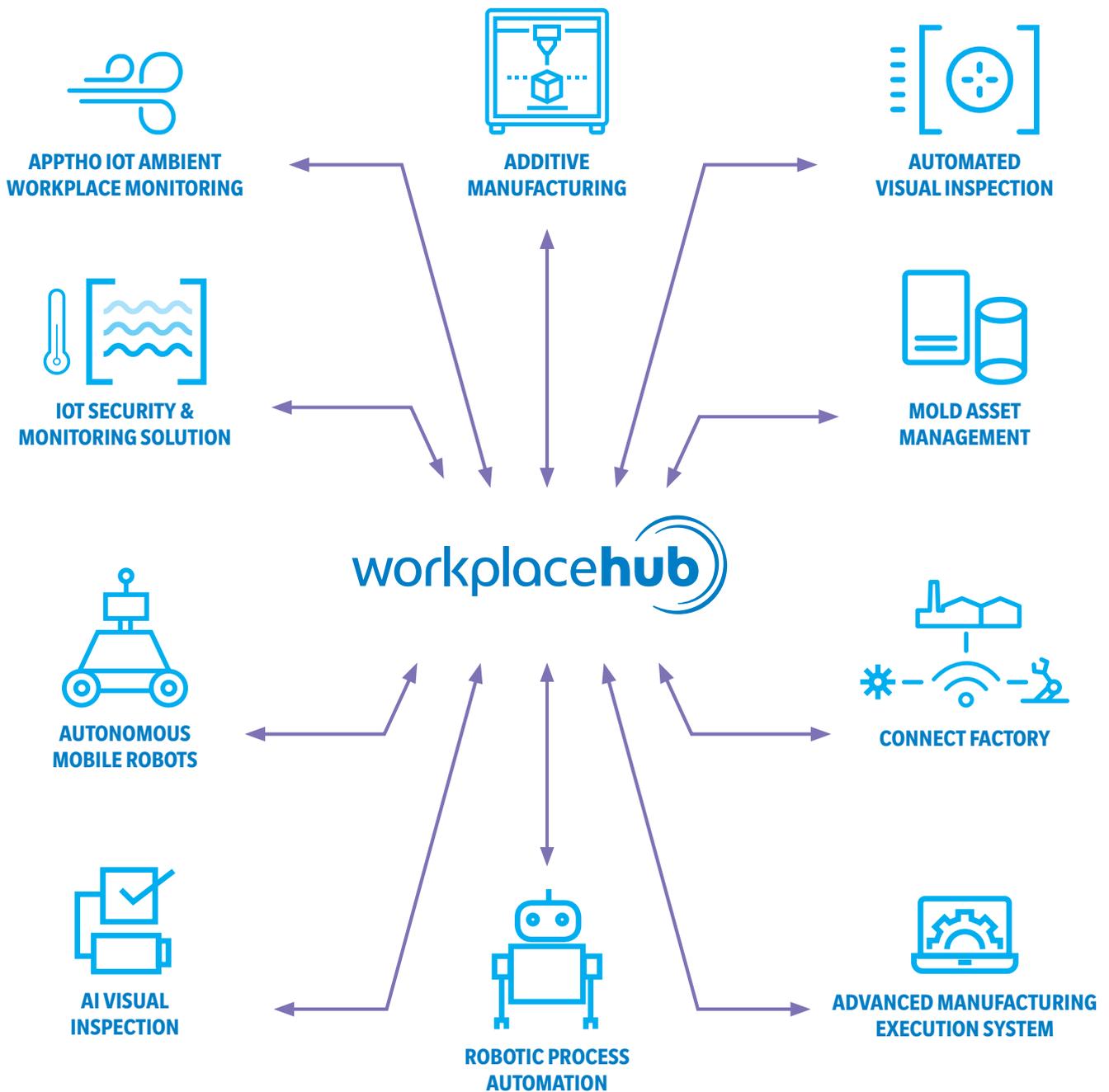
IOT SECURITY & MONITORING SOLUTION

The IoT will enable organisations to make faster and smarter decisions. By utilising the technology of both MOBOTIX's state-of-art IP video system and advanced video analytics, Konica Minolta provides reliable, smart and secure solutions for large-scale deployment. Organisations now can enjoy both smart security and business intelligence in the same infrastructure video system installation.

APPTHO IOT WORKPLACE AMBIENT MONITORING

Konica Minolta APPTHO provides ambient parameters for better monitoring of workplace safety and compliance. It also provides workplace ambient parameters logging that can be useful for incident management.

REVOLUTIONISING THE WORKPLACE

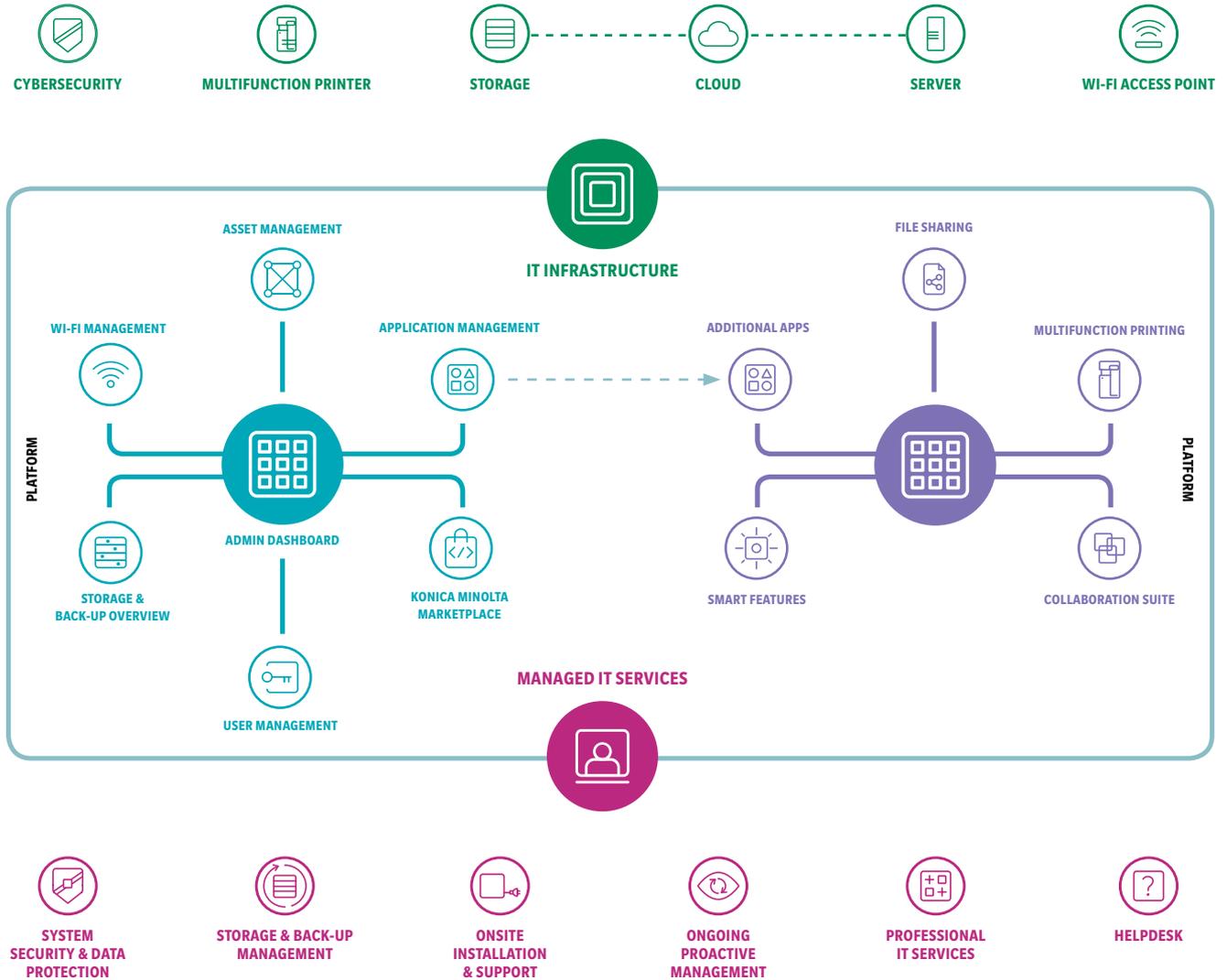


The [Konica Minolta Workplace Hub](#) for digital manufacturing uses data predictive analytics, sharing and automated processing. It is at the heart of IIoT (Industrial Internet of Things).

workplacehub

IT on your terms

Konica Minolta's Workplace Hub aims to combine service and capabilities. It's a platform that combines infrastructures and applications into a single on-premise device, supported by hybrid cloud services including backup and storage.



Through hybrid cloud delivery, Workplace Hub offers the same IT business experience as a fully managed local IT service, but delivered via the Internet from secure data centres. It's a far more straightforward alternative to owning and managing on-premise IT infrastructure, and has significant advantages:

COST SAVINGS: services can cost 30% to 50% less

IMPROVE PRODUCTIVITY: it's faster to get employees up and running with new services

LOW EQUIPMENT INVESTMENT: solution can ride along existing IT assets

EASY SETUP: simple transition from on-premise IT infrastructure

HASSLE FREE: cloud providers offer fully managed IT systems

RELIABLE: many cloud providers already provide more than 99% availability

PREDICTABLE: a wide range of Service Level Agreements for support and management

FUTURE-PROOF: no long commitments are needed, and the cloud provider upgrades the technology

REMOTE ACCESS: users can connect to a business IT system from anywhere over the Internet

BUSINESS CONTINUITY: provides a disaster recovery solution

**ENGINEERED
FOR PRECISION.
DESIGNED FOR
RELIABILITY.**



ADDITIVE MANUFACTURING PROFESSIONAL 3D PRINTING

BENEFITS



VERSATILE, FUNCTIONAL PROTOTYPING

Our ever-growing library of resins enables functional prototyping for a variety of applications, continually expanding capabilities across industries.



PRECISION PRINTS

Using industrial-grade stereolithography (SLA) technology, the Konica Minolta 3D Form 2 powerful optical engine delivers laser-sharp prints with spectacular detail.



LOWER MANUFACTURING COST

90% cost savings compared to outsourced machining.



IMPROVE LEAD TIME

Lead times are reduced from 5 business days to one working day or less, getting lines running faster.



OPTIMISATION OF PARTS

No minimum order quantities, and parts can be replaced one at a time, as needed (save on setup fees).



DESIGNED FOR RELIABILITY AND ACCESSIBILITY

The Form 2's entire print process is designed to be intuitive – from free PreForm software that helps set files up for successful printing to hardware that's easy for anyone to use.

AUTOMATED VISUAL INSPECTION



In today's automobiles, versatile high-resolution touchpads have replaced analog gauges and knobs. Modern smart lighting adjusts to changing conditions. Radios have been replaced with multi-function touch-sensitive infotainment displays. Generic sealed-beam and capsule headlamps have been superseded by stylish, aerodynamically-efficient, model-specific LED and HID headlamp assemblies. Head-up displays (HUDs) are becoming an automotive standard.

Radiant Vision Systems presents a complete portfolio of measurement solutions to increase design efficiency and control production costs of automotive displays, lighting systems, and illuminated symbols. Radiant's fully integrated measurement systems are helping automakers and suppliers worldwide improve their R&D, quality control, and production operations.

IN-VEHICLE DISPLAY



Embedded LCD and OLED Displays

Instrumentation, information, navigation, and entertainment systems are all moving to display technology. Expectations for colour and clarity of these displays are high, based on consumer experience with TVs, computers, and phones. A perfect display is critical to the purchase decision and long-term customer satisfaction. Human inspection cannot accurately and efficiently detect display faults. Automated display inspection for luminance, chromaticity, uniformity, line/pixel defects, and mura can prevent "escapes" and ensure a perfect end-user experience. Radiant's integrated inspection solutions, using a ProMetric® Imaging Colorimeter or Photometer and TrueTest™ Automated Visual Inspection Software, can perform automotive-specific inspection applications, including testing per the German Automotive Black Mura Standard.

INSTRUMENT CLUSTERS, CONTROLS, TELL-TALES, & INDICATORS

Illuminated Symbol Testing

A ProMetric system comprised of an imaging colorimeter and ProMetric Software is a simple and accurate solution for testing illuminated characters. The software features a powerful tool (Auto-POI, or Automatic Points-of-Interest) that allows users to automatically select points of interest based on location or colour and luminance values (Lv and CIE x,y thresholds). You can then run calculations on a single character, or a group of like-characters, to ensure uniformity within or between symbols regardless of location, shape, size, or colour. The Auto-POI system provides comprehensive data through ProMetric Software, including average luminance across characters, points of minimum and maximum luminance, colour value, and dominant wavelength.

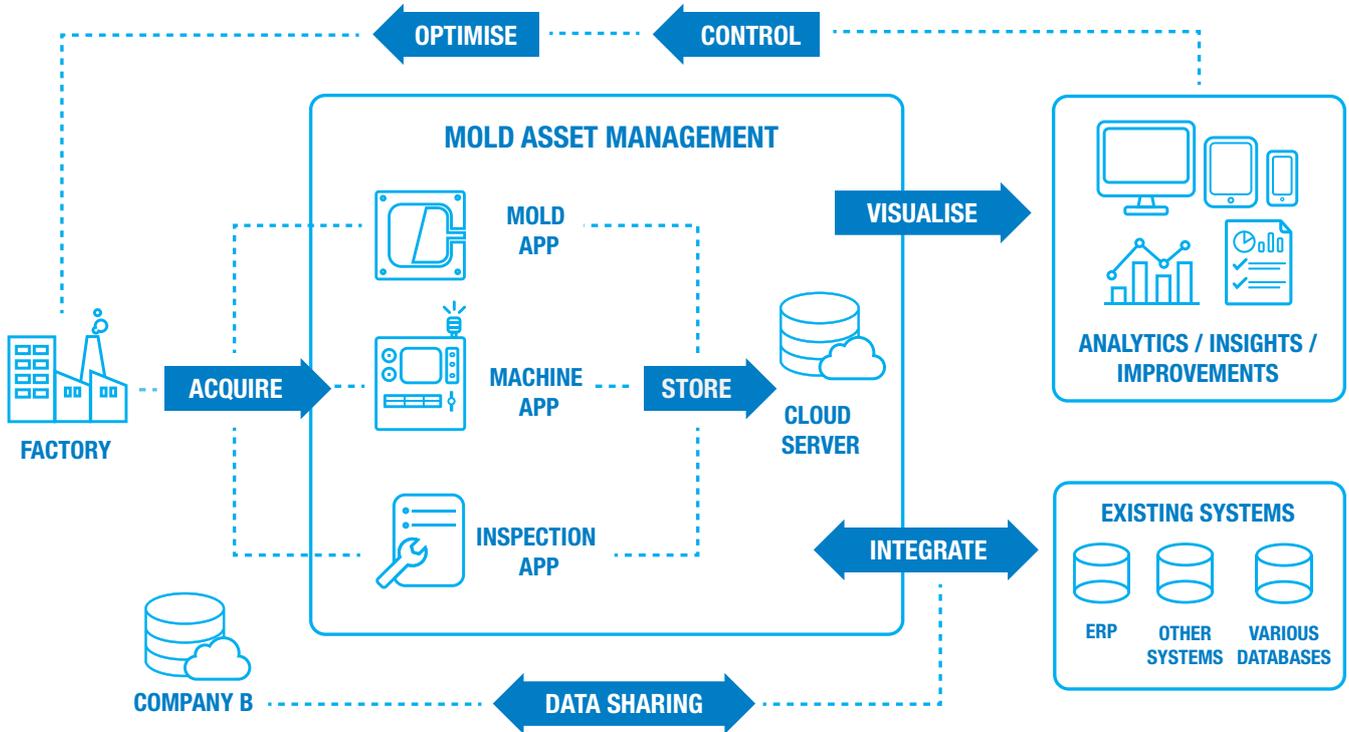
HEADLAMPS, LIGHTING ASSEMBLIES, HEAD-UP DISPLAYS (HUDS), CAMERA MONITOR SYSTEMS (CMS)



ProMetric imaging colorimeters and photometers with electronically-controlled lens provide accurate luminance and chromaticity measurements.

MOLD ASSET MANAGEMENT

Mold Asset Application specialises in mold, machine and inspection management. It collects and stores data into the cloud for data visualisation and analysis, as well as data sharing between companies. The application encourages a predictive maintenance model for your assets, resulting in downtime reduction, maximises mold life and overall asset availability.



BENEFITS



PREVENTIVE MAINTENANCE



PAPERLESS INSPECTION



IMPROVE INSPECTION RELIABILITY



DATA TRACEABILITY AND VISIBILITY



OPTIMISE WORK MAN-HOURS

FEATURES



MANAGE ASSET LIFE CYCLE



MANAGE MAINTENANCE SCHEDULE AND HISTORY



MANAGE AND TRACK ISSUES ON SHOP FLOOR



MANAGE INSPECTION RESULTS AND HISTORY



ALERT AND NOTIFICATION SYSTEM



DATA ANALYSIS AND REPORTS



CONNECTED FACTORY SMART START PACKAGE

Transform your business with the right foundational digital tools. With the Konica Minolta Smart Start Package, the solution allows even older production machinery to be integrated into the system with retrofitting options. This solution allows the status of machinery to be monitored on an ongoing basis and this information can then be transferred to a central IT platform and presented accordingly on dashboards.

FEATURES



Quick and customised introduction to digitalisation



In situ quality monitoring



Improve machine productivity and utilisation through KPIs tracking, such as Overall Equipment Effectiveness (OEE)



Real-time monitoring of machine conditions and performance



Predictive maintenance and minimise unplanned downtime

PACKAGE INCLUDES

IIOT BASIC PLATFORM

The Smart Start Server

IIOT MACHINE GATEWAY

Connect machines, sensors and components

SERVICES

Connect machines, configure, install software and provide training

SMART MANAGED SERVICES

An all-in-one solution, service and support

IIOT STRATEGY WORKSHOP

Determine your company's readiness, discuss solutions and create implementation plan

ADVANCED MANUFACTURING EXECUTION SYSTEM (AMES)

Konica Minolta's AMES is an information system that connects, monitors and controls manufacturing processes and data flows on the factory floor. By tracking end-to-end manufacturing, from raw materials sourcing to finished goods inventory, AMES helps companies manage workforce, equipment and resources in real-time. Moreover, AMES is capable of integrating with existing software systems, various databases and Industrial Internet of Things (IIoT) sensors. It is available via desktop, web and mobile applications.



BENEFITS



Better visibility, control and optimisation of production



Real-time tracking and monitoring of operations and key

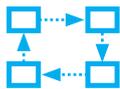


More efficient allocation of resources and skillsets



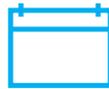
Improve quality control, compliance and auditing

FEATURES



WORKFLOW CREATOR

Design sequential or parallel workflows and assign resources to each step



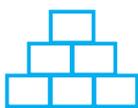
PRODUCTION SCHEDULER

Work orders are planned and scheduled via prioritisation, skillsets and availability of resources



WORKSTATION CONTROL

Track and control production status and quality control check lists in real-time, supported with digital work instructions



INVENTORY MANAGEMENT

Manage material movement, location and status including raw materials, work-in-progress units and finished goods



MAINTENANCE MANAGEMENT

Plan and schedule different types of maintenance such as ad-hoc, time and usage recursive



DASHBOARD & REPORT DESIGNER

Customise dashboards and reports to visualise, monitor and analyse real-time operational data and key performance indicators

ROBOTIC PROCESS AUTOMATION

Manufacturers have been leveraging on physical robots to streamline their assembly process. However, they may be facing significant pain points in the crucial back office operations such as complying with regulations, real-time reporting, labour shortage and inventory management. With RPA, manufacturers are able overcome these pain points and become more agile in their operations.

There are various applications of RPA in manufacturing domain, one example is the Bill of Materials (BOM) document where the raw materials and components of a product are listed. The level of accuracy and completeness in a BOM is crucial. Inaccurate or missing components in the BOM will result in an increase in operating costs, wastage of materials and more time involved to order missing components. Using RPA to automate the creation of a BOM reduces human errors and enables faster turnaround time in a product creation.

EXAMPLES OF POTENTIAL USAGE OF RPA IN CORE AND NON-CORE FUNCTIONS IN A MANUFACTURING COMPANY:

DIGITAL WORKFORCE

SUPPLY CHAIN

- Inventory management
- Demand & supply
- Planning
- Invoice & contract
- Management

CUSTOMER SERVICES

- Address change
- Payments
- Scheduling appointments
- Order modifications

FINANCE

- Process-to-pay
- Order-to-cash
- Record-to-report

OPERATIONS

- Bill of Materials
- Factory Production Reporting

HR

- Payroll
- Onboarding & offboarding

IT

- Server & app monitoring
- Routine maintenance & monitoring

BENEFITS



Reduce complexities by streamlining back office operations



Enhance communications with real-time process monitoring and analytics



Reduce cost by minimising errors and wastage with better accuracy



Comply to regulations by ensuring no process-driven data is kept throughout automation



Improve efficiency & productivity of FTEs to perform more valuable tasks



Go green with paper-less automation



AI VISUAL INSPECTION

Konica Minolta's AI Visual Inspection Solution detects product appearance defects by supervising a small amount of image data. Data accumulation allows for defect record analysis. This realises automatic visual inspection and reduces reliance on human skills.



Faster and easier automatic visual inspection

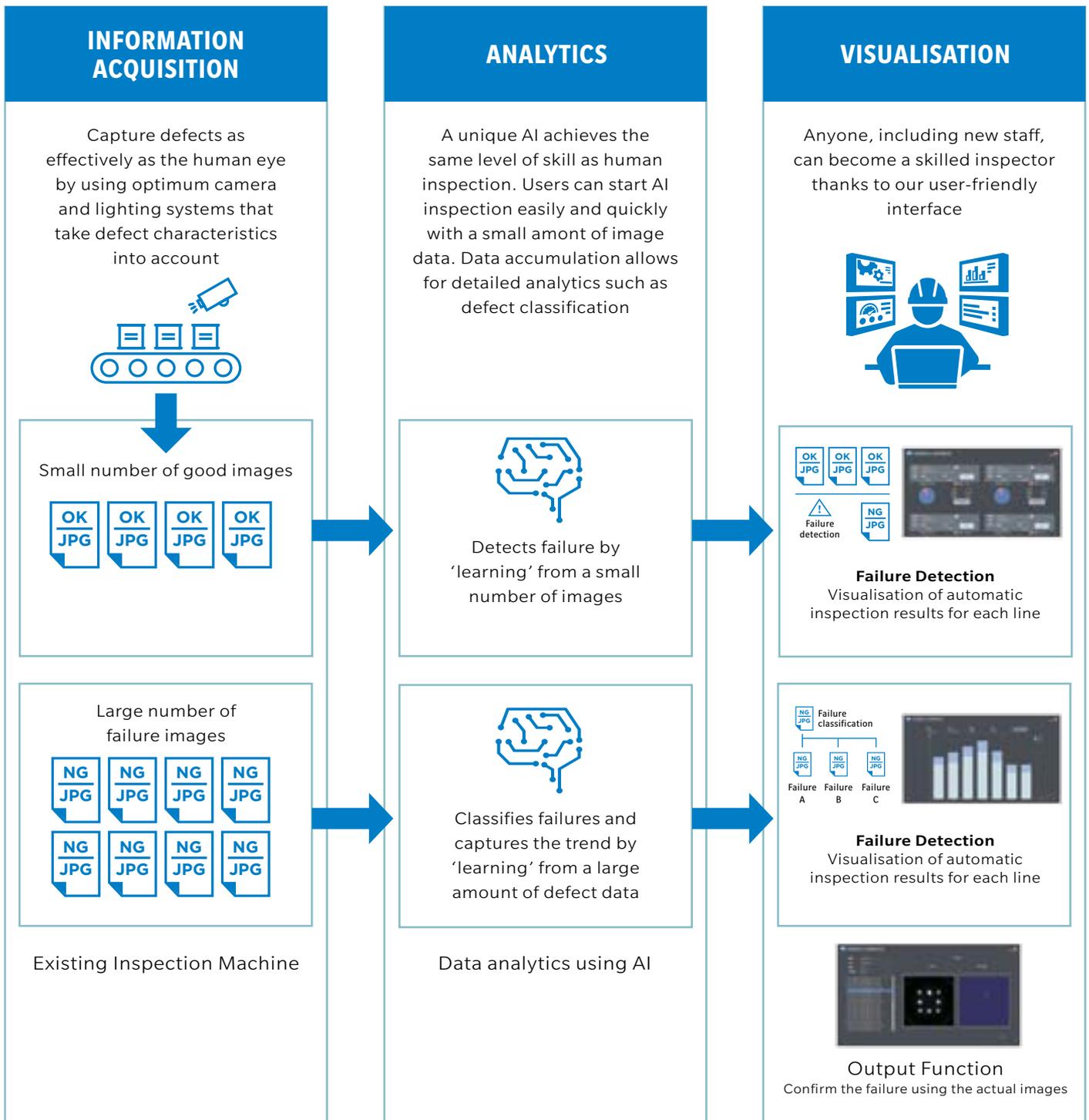


More robust visual inspection without relying on human skills



Process improvement based on defect record analysis

This AI Visual Inspection Solution utilises Konica Minolta's image processing know-how, based on digital printing and X-ray imaging diagnostics technologies. It can reduce defect rate and improve overall production quality by visualising the correlation between visual inspection data, machine data and defect trend.



Konica Minolta offers robots to automate logistic operations in manufacturing and warehouse. This next generation robot is a trackless AGV equipped with LIDAR sensors and 3D cameras, running on Robotic Operation System (ROS) and self-navigation algorithm. This autonomous robot is ideal for dynamic environments that co-exist with human traffic, forklifts, manual pallets and other forms of inter-logistic operations.



AUTONOMOUS MOBILE ROBOTS

Models of the robot are available to transport payloads up to 500kg for indoor deployment. The robot also complies with extensive safety requirements as well as electrostatic discharge (ESD) and clean room standards. It can also accommodate different applications to interface with different load trolleys or bins and to meet operation requirements. The robot has an intuitive user interface and requires only minimum training for computer-literate users to operate the robot. In the event that an operation needs multiple robots, a Fleet Management software can be used to manage a fleet of robots as well as provide analytics and insights of an operation for further improvement. Konica Minolta also offers services to integrate the robotic system into infrastructures like sliding door, lift system or ERP software to further automate an operation.



BENEFITS



Install quickly and easily without changing the workplace layout



Replace fixed conveyor bands with flexible Mobile Robots



Reduce delivery time and improve competitiveness



Re-deploy workers from pushing a cart to higher-value activities



Diminish the costs and dangers of forklift trucks



Automate material handling and internal logistics



Enhance production flow and make significant progress



Solve bottlenecks and minimise non-productive time



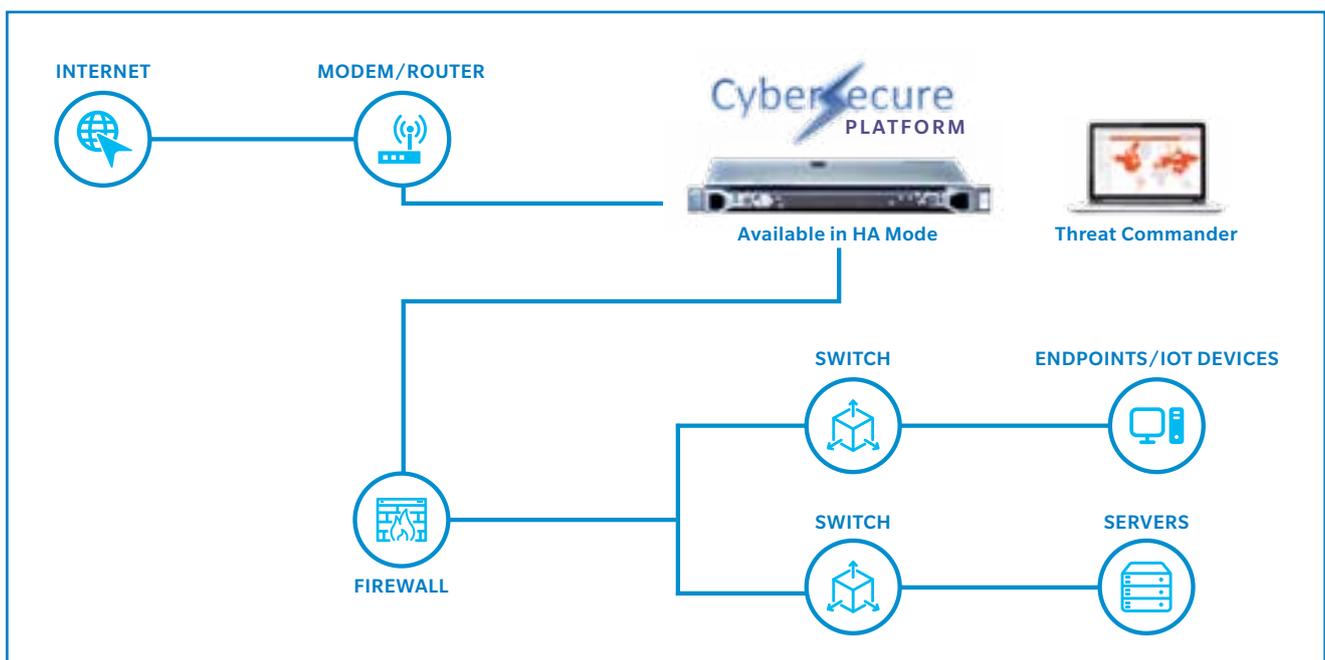
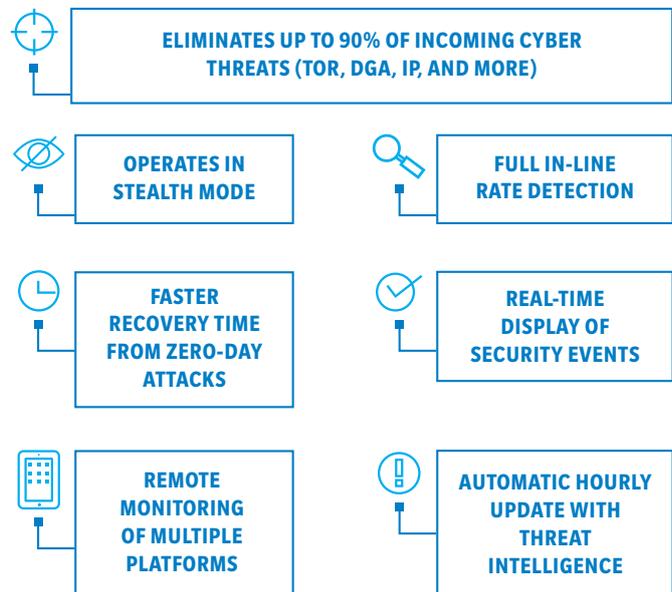
Eliminate idle time between process steps

CyberSecure PLATFORM



STOP CYBER ATTACKS BEFORE IT REACHES YOUR NETWORK

With the proliferation of the Internet, businesses are constantly being targeted by various modes of cyber attacks worldwide. Organisations are encouraged to invest in cyber security solutions to protect their businesses, especially since the impact of a cyber attack can be greater than the cost of getting protected in the first place. With **Konica Minolta CyberSecure Platform**, we provide multi-featured defence in a box which helps organisations to mitigate cyber threats instantly.





IOT SECURITY & MONITORING SOLUTION

In today's connected world, data is vital for enhancing business intelligence and improving processes. Our IoT security and monitoring solution automates data collection. By using data collected from real operations and video analytics, it helps to easily identify areas for process improvement. The data translated into insights and business intelligence that help to innovate work processes boosts productivity with efficient resourcing and reduced downtime.

BENEFITS



Optimised
Workflow



Remote
Monitoring



Better
Deployment
of Manpower



Business Intelligence
for Decision Making
and Learning



Security and
Evidence-Based
Data

FEATURES



MONITOR ACTIVITY

Keep track of activities in high traffic areas with hemispheric technology and adjustable lens modules that give you a choice of seeing a wider view of the surroundings, or focusing with a clear telescopic shot.



RECOGNISE FACES

Spot known criminals, shoplifters or other blacklisted persons in a crowd with state-of-the-art facial recognition technology that identifies persons of interests and calls your attention towards them.



TRACK LICENSE PLATES

Be the first to know when a VIP drives into your hotel or event parking space, and have your hospitality staff ready to receive the guest – thanks to intelligent automatic number plate recognition technology that identifies vehicles as they approach.



SENSE DANGEROUS TEMPERATURE CHANGES

Thermal radiometry automatically generates an alarm if the temperature exceeds or falls below the pre-defined temperature range – so you will be notified before equipment or vehicles overheat, not after they fail.



KEEP INTRUDERS OUT, WHILE LETTING AUTHORISED PERSONNEL ENTER THE PREMISES

Facial and body recognition technology identifies persons nearby and allows authorised persons into your premises, while alerting intruders that they are trespassing – setting off an alarm if the warning is not heeded.



IDENTIFY UNATTENDED OBJECTS

An advanced video analytics CPU can identify when suspicious bags are left behind by owners, alerting security personnel who can inspect the items and ensure the safety of passers by.



“SEE” IN THE DARK

Thermographic technology provides reliable monitoring of temperature-critical processes and early warnings. These thermal cameras measure the thermal radiation of nearby objects and persons, so you will always have eyes on your premises – even in complete darkness.

IOT APPTHO

WORKPLACE AMBIENT MONITORING

Smart industrial operations require precise ambience for excellent quality control. IOT APPTHO provides real-time monitoring so that operation ambience can be controlled within the desired limits.

IOT APPTHO indicates ambient parameters for better monitoring of workplace safety and compliance. It provides workplace ambient parameters logging that can be useful for incident management.

APPTHO effectively detects nine air quality parameters through customisable thresholds according to your needs and provides real-time alerts of sudden changes through the detection ambient changes. You may then adjust the conditioners to ensure work indoor conditions are right for materials storage, machine operations as well as a safe workplace.



THE 9 AIR QUALITIES THAT APPTHO TRACKS ARE AS BELOW:

 CARBON DIOXIDE	 PARTICULATE MATTER (PM2.5)	 NITROGEN DIOXIDE	 HUMIDITY	 OZONE
 TEMPERATURE	 CARBON MONOXIDE	 AIRBORNE CHEMICALS (VOCs)	 AIR PRESSURE	

BELOW SHOWS A TABLE OF AIR PARAMETER RANGES RECOMMENDED BY ENVIRONMENTAL PROTECTION AGENCY (EPA) STANDARDS AND WHO:

Sensor	Range 1	Range 2	Range 3
Temperature (°C)	[10, 21]	[21, 26]	[26, 40]
Humidity (%)	<30	[30, 50]	[50, 100]
PM2.5 (µ/m ³)	[0, 50]	[50, 100]	>100
VOC (ppb)	[0, 400]	[400, 800]	>800
Carbon Monoxide (ppm)	[0, 35]	[35, 70]	>70
Carbon Dioxide (ppm)	[400, 800]	[800, 1,500]	>1,500
Ozone (ppb)	[0, 30]	[30, 70]	>70
Nitrogen Dioxide	[0, 100]	[100, 250]	>250
Air Pressure (mbar)	< 970	[970, 1,030]	>1,030

APPTHO CAN COVER APPROXIMATELY 50 TO 80 SQUARE METRES OF INDOOR OPEN SPACE. THE SPECIFICATIONS OF APPTHO ARE AS BELOW:

	Relative Temperature	Relative Humidity	PM 2.5	Carbon Dioxide	TVOC	Carbon Monoxide	Nitrogen Dioxide	Air Pressure	Ozone
Range	-40°C to 85°C	0 to 100	0 to 200	400 to 10,000	0 to 1,200	0 to 1,000	0 to 1,000	300 to 1,100	0 to 1,000
Resolution	0.1 °C	0.1%	0.1 µg/m ³	1 ppm	1 ppb	1 ppm	1 ppb	1 mBar	1 ppb
Units	°C / °F	%	µg/m ³	ppm	ppb	ppm	ppb	mBar	ppb

Regional Headquarters

Konica Minolta Business Solutions Asia Pte Ltd.

30 Pasir Panjang Road, #06-32

Mapletree Business City

Singapore 117440

Tel: +65 6361 2800

Fax: +65 6361 2888

Email: enquiry@konicaminolta.sg

www.konicaminolta.asia/business

About Konica Minolta Business Solutions Asia

Konica Minolta Business Solutions Asia is transforming the workplace of the future with its customer-centric solutions and hardware for the digitally connected world. We are committed to creating new values for the society with our expertise. From information management to technology enabling tools, the solutions help businesses improve their time to information, support mobility, and optimise business processes with workflow automation. Konica Minolta, Inc. has also been named in the Dow Jones Sustainability World Index, one of the most prestigious global indices of ESG investment, for seven years in a row. For more information, please visit <http://www.konicaminolta.sg/business/>.

(Information accurate as of 1 October 2019)

Our organisation is certified according to ISO27001, ISO9001, ISO14001 and ISO13485 standards.