legrand | MINKELS | Raritan | Starline

DATA CENTER **INSIGHTS**

Edition 2

STARLINE

Introduction of award-winning busbar technology specialist Starline

SEVEL - ITALY

Sevel's data center forms basis for daily production of 1,200 commercial vehicles

KAO DATA - UK

Taking a collaborative approach to cabinet design and installation

ISF - LEBANON

Legrand wins International Security Forces (ISF) tender with local partner

DATACENTER.COM - THE NETHERLANDS

CEO Datacenter.com explains why Nexpand was the logical choice

CREATING INTELLIGENT DATA CENTERS

legrand®

LCS3 SATISFIES THE LATEST REQUIREMENTS OF DATA CENTERS

LCS 3
3 DIMENSIONS OF EXCELLENCE
PERFORMANCE SCALABILITY EFFICIENCY
DATA CENTER LOCAL AREA NETWORK

Rising volumes of data exchanged, increasing numbers of networks, the need for higher speeds and the density of equipment all make it necessary to have more reliable, secure, and high performance electrical and digital building infrastructures. LCS3, Legrand's new structured cabling range, is especially designed to meet these needs.

It offers numerous advances in terms of performance, scalability and efficiency. The new connectors can cope with the most critical environments, with copper solutions as high as Category 8. LCS3 also includes a considerably expanded fiber optic offer, allowing speeds of as much as 100 Gbps. As well as innovations in terms of ergonomics: our new structured cabling solutions are modular, easy to install in enclosures, and optimized for maintenance.

CONTENTS

COLOPHON

Data Center Insights is a publication of Legrand Data Center Solutions and is published twice a year.

Legrand is a reliable partner with more than 30 years of experience in the data center market with excellent service. Legrand Data Center Solutions provides flexible, proven, and scalable data center solutions.

The specialist brands of Legrand Data Center Solutions – like the strong data center players Minkels, Raritan and Starline – are part of the Legrand Group, a publicly traded company (NYSE Euronext Paris: LR) with worldwide sales in the low-voltage installation, data network and data center markets. Legrand operates in more than 180 countries and reported sales of over €6.6 billion in 2019.

If you have questions or comments about the articles in this magazine, please contact the Marketing Department of Legrand Data Center Solutions:

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Legrand has been a leader in electrical and digital infrastructures for decades. As early as the mid-90s Legrand already had a footprint in data centers with part of the portfolio, such as structured copper solutions. Approximately 10 years ago, Legrand saw a very strong growth in the data center industry and decided to focus on this market segment...

The road to a strong global footprint in the data center market

More than 120 data center specialists in Europe are here to help you

EDITORIAL

LEADING POSITION

About a decade ago, Legrand started to look for companies that were highly respected for its technology and knowledge and could help Legrand achieve a leading position in the data center industry. Frédéric Xerri, Executive Vice President Europe of Legrand, explains: "We acquired companies like Minkels and Raritan. We bundled our data center experience and became Legrand Data Center Solutions. Our goal is to provide our customers with a complete solution for data centers."

FULL SOLUTION

Companies like Server Technology and modulan became part of the Legrand Group later on – with Starline as its most recent addition. Mathew George, EMEA & SW Asia Sales Director of Starline, explains: "Adding our unique flexible busway solutions to the Legrand portfolio greatly enhances the Legrand end-to-end solution offering. With all its premium brands, from cabinets to PDUs, Legrand has clearly achieved a strong footprint in the data center market." Ralf Ploenes, Vice President Sales Raritan & Server Technology Europe, continues: "Legrand only selects leading companies that expand and improve the current product offering, in order to create a full solution for its customers. Our customers regard Legrand Data Center Solutions as a global best of breed technology specialist that can respond to trends fast."

KEY TRENDS

"The data center market is currently going through a rapid transformation period and technology developments are advancing fast", says Frédéric Xerri. "The key trends we see today are within the areas of: Artificial Intelligence (AI), Internet of Things (IoT), Edge and Sustainability. We are meeting these trends by investing heavily in R&D." Christiaan van Terheijden, CEO of Minkels, continues: "To put some numbers to this, Legrand invests nearly 5% of its sales to R&D, making a bold statement of its commitment to deliver best-in-class products. These investments have helped us, among others, to focus on developing a brand-new cabinet platform."

CUSTOMER INVOLVEMENT

Best-in-class products that meet customer needs can only be created with the regular involvement of current and future customers; to learn first-hand about their daily challenges in operating data centers and the trends they see happening. Soliciting feedback during customer feedback sessions – while working on new solutions like the Nexpand cabinet platform – is also very beneficial. It offers us the opportunity to optimize our solutions in a way it perfectly fits our customer needs. And we love to share our knowledge with partners and customers as well through our knowledge documents – like white papers and our magazine Data Center Insights – or during a visit at your company. Nowadays, we're evolving fast into a global cutting-edge solutions specialist with offices, availability and support just around the corner!" ■

From left to right: Christiaan van Terheijden, CEO of Minkels
Frédéric Xerri, Executive Vice President Europe of Legrand
Ralf Ploenes, Vice President Sales Raritan & Server Technology Europe
Mathew George, EMEA & SW Asia Sales Director of Starline

Get acquainted with NEXPAND

Minkels launched a brand new cabinet platform recently.

During various launch events across Europe customers and eco-system partners were given the opportunity to get acquainted with Nexpand. The events together attracted more than 400 attendees.

Those interested in viewing the Nexpand platform can contact one of the 120 team members of Legrand Data Center Solutions.

Read more on page 14-17 or visit the website for more information, technical datasheets, animations, etc.

www.minkels.com/nexpand

www.minkels.com/videos/nexpand

MINKELS
A brand of legrand

Legrand adds Starline Busway Products to Data Center Portfolio

Legrand has further expanded its global data center technology offerings by completing another acquisition and adding Starline Holdings LLC, formerly Universal Electric Corporation (UEC), to its family of data center brands. Starline is a global provider and developer of flexible, customizable power distribution systems.

Starline immediately became part of Legrand, North and Central America's Data, Power and Control division along with several other global data center brands that include Server Technology, Raritan, AFCO, Electrorack, and Ortronics.

"Legrand has enjoyed significant growth in the data center market by focusing on best-of-breed product offerings," said John Selldorff, President and CEO of Legrand, North and Central America. "As a global leader in customizable power solutions, Starline's award-winning products have revolutionized electrical power distributing in data centers, and perfectly complement our other brands in this business."

Read more on page 12 and 13. More information on Starline can also be found online.

www.starlinepower.com

Starline
A brand of legrand

Gain the latest data center knowledge during Data Center Academy!

Every year Legrand Data Center Solutions organises several Data Center Academies.

Data Center Academy will take place on the 23rd and 24th of September*! This is another opportunity for (inter)national Legrand organizations, partners and customers to gain data center knowledge and share experiences.

The two-day program will offer the attendants insight information on the latest products in our data center portfolio, the current standards and new market trends. Besides presentations and workshops, you are going on a data center tour... You will be visiting the Minkels factory and a data center in Eindhoven, The Netherlands!

NEWS

Do you want to participate? Register for Data Center Academy at minkels.com/events.

** The dates are subject to developments concerning Covid-19. In the meantime, we will share our knowledge online through among others webinars. Keep an close eye on our webpage: minkels.com/events.*

Starline®
A brand of legrand®

RAISING THE BAR FOR HIGHER POWER

When building a data center, power and cooling are two of the top priorities. But how was this done in the past and how can we raise the bar?

THE PAST

Historically, raised floors, or concrete tiles installed onto a steel grid resting on stanchions 2 to 4 feet above a slab floor, have been deployed for cooling purposes. The perforated tiles that make up the floor allow for cool air to flow out of the below passage and onto the server cabinets. However, this underfloor area also houses whips and cables that supply power to the racks. As a data center space grows, more server racks are installed which require more power, in turn creating more and more cables under the raised floor; ultimately restricting the flow of cool air and completely contradicting the purpose of the excess space to begin with. Over time many have realized this drawback of the traditional underfloor method, as well as various others, including the fact that raised floors are costly; maintenance is required to remove unused cables, which tend to be abandoned; and risk of human error while working with circuit breakers and cables that are not clearly associated with a given load.

SUSTAINABLE

Overhead power distribution – otherwise known as busway systems – directly combat the traditional power solution of whips and cables beneath a raised floor. These systems have been proven to be both scalable and sustainable solutions to providing power. Starline Track Busway systems provide a continuous access slot to power – meaning that a data center space will always be prepared for future reconfigurations or expansion. Power can be tapped at any location with a variety of plug-in units, eliminating panel boards, long runs of conduit and wire, and expensive installation costs for dedicated power outlets. These busway systems are highly sustainable: they can be used for years and years and create much less material waste than the traditional whips and cables method does. Also, in order to cope with today's ever-increasing server densities, an increase in kW power density is needed, which equates to a related increase in cooling requirements. Before, this would mean additional power cables under the floor that obstruct air flow and thus make cooling more difficult. With an overhead busway system, this threat is eliminated making it an extremely energy efficient and safe method for distributing power.

FLEXIBLE AND SCALABLE

It is often difficult to know the exact electrical design needed at the beginning of a project. This can result in the need to reconfigure electrical outlets and their locations, which increases costs and causes schedule delays. With a scalable overhead busway system, components and power circuits can be added as needed – without tying up capital and wasting resources – rather than building out the entire facility in the beginning. This is very beneficial for colocation and other facilities that are built out over time. It also means that the cost of maintenance is automatically dropped for the long run, as there is no need to reconfigure electrical outlet locations and types.

SIMPLE INSTALLATION

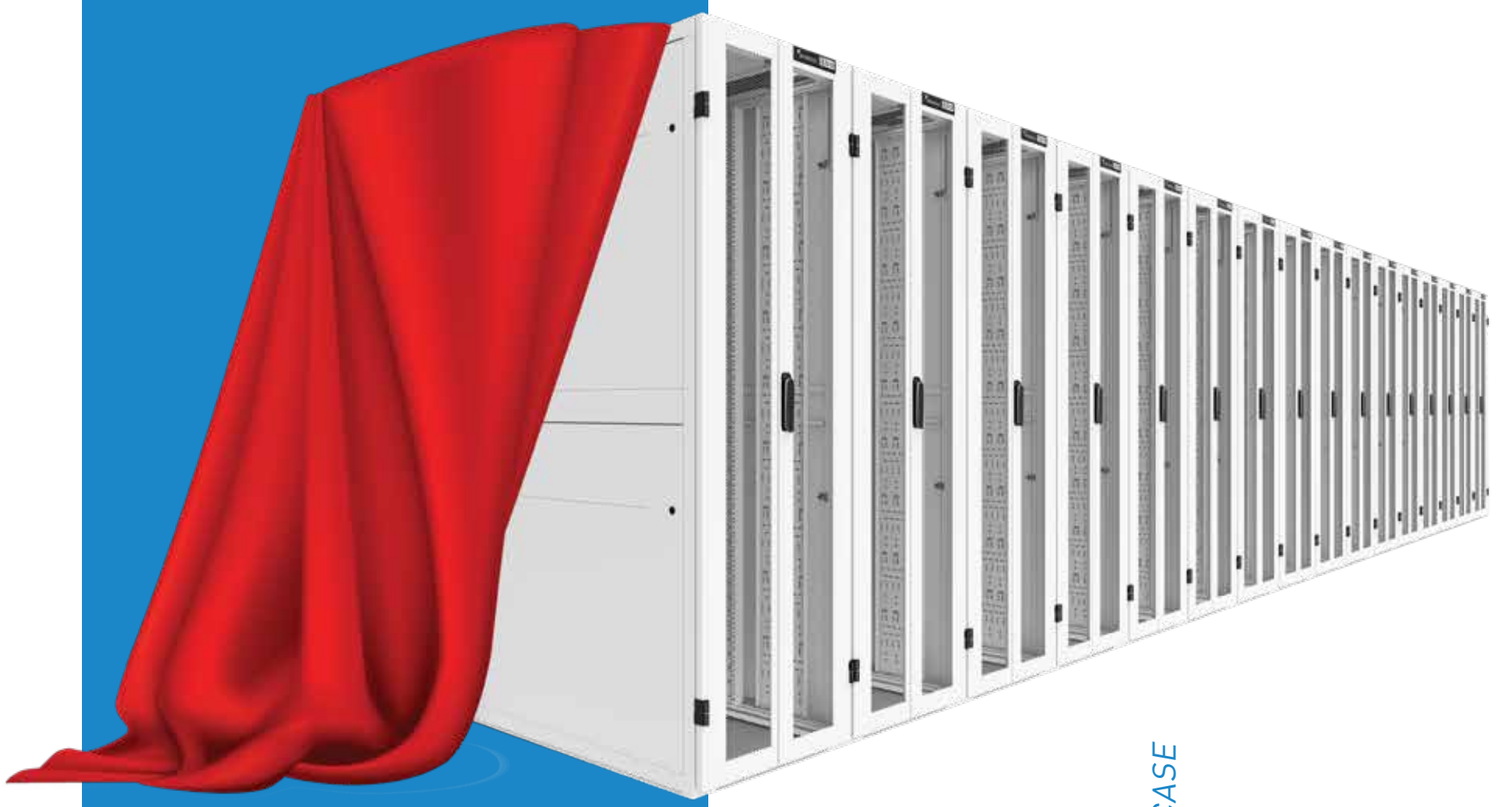
The installation of traditional whips and cables is labor intensive in nature, and very costly. Compared to installing a raised floor and hundreds or thousands of whips and cables, Starline installation is very simple and not time or labor intensive. When designing a data center with traditional electric systems, engineers or designers must pre-plan every outlet. Because it is nearly impossible to predetermine the power requirements for each rack in each location when a data center goes live – let alone plan for future requirements – this will result in expensive and time-consuming changes that will have to occur in the future. However, with a flexible, adaptable busway system, future changes that require expensive labor charges and potential outages are completed avoided.

ADDRESSING CHALLENGES

With the world around us becoming more and more dependent on the Internet, the need for additional bandwidth is only going to increase. This additional bandwidth results in more and larger mission critical facilities and infrastructure, which require more power. To address this challenge in the most efficient way possible, it's essential to take advantage of the most up-to-date technology available, as opposed to facing the needs of the future with the solution of the past.. ■

MINKELS
A brand of legrand

Minkels released new cabinet platform for data centers: Nexpand! The new platform has been designed and built together with the customer from the ground up based around four values: Smart, Solid, Secure and Sustainable.



GET ACQUAINTED

WITH MINKELS BRAND-NEW FUTURE-PROOF CABINET PLATFORM NEXPAND

OFFERING A UNIQUE CABINET PLATFORM

A two-year period – with lots of research & development, and multiple customer input sessions – has resulted in a unique IT cabinet solution offering for data centers. The feature-rich Nexpand platform meets therefore customer demands.

PROMISE

Customers can rely on a scalable and future-proof platform that is ready to face todays challenges (the exponential rise in Digitalization, Internet of Things, 5G, Edge and Artificial Intelligence) and whatever comes next! "The Nexpand data center platform underlines our promise of delivering cabinet and containment solutions that accommodate IT infrastructures in the most efficient way possible, that are scalable and evolve with new technologies and user requirements", explains Christiaan van Terheijden, CEO of Minkels.

CLOSE CUSTOMER RELATIONSHIPS

The Minkels engineering and product management teams, together with a number of customers, have jointly delivered this brand-new platform. Van Terheijden continues: "You can say it's made for and by our customers. Their user experience has given us invaluable additional input and demonstrates the close relationships we maintain with our customers."

FOUR FUNDAMENTAL VALUES

Nexpand is built around four fundamental values that are the basis of a future-proof cabinet platform – **Smart, Solid, Secure and Sustainable.**

REAL CUSTOMER VALUE

You can see clearly that Legrand and Minkels had one simple philosophy during the design and build of the new platform: "Only when real customer value is added, it will be part of Nexpand". That is why every element plays a key role in the system's functionality and performance!

WHATEVER COMES NEXT!

A data center must accommodate IT infrastructure in the most efficient way possible. Infrastructure needs the space to grow and evolve with new circumstances, technology, and user requirements. Therefore, modifications and innovations are also necessary for next level data center cabinets to help ensure improved uptime, efficiency, security, and sustainability. The Nexpand cabinet platform offers you the space to accommodate whatever comes next!

Nexpand has been designed and built together with the customer from the ground up based around four values: Smart, Solid, Secure and Sustainable.

SMART
Unlimited possibilities

The design of the cabinet is extremely flexible. For instance, the interior is built to be adjusted in three dimensions and the roof is completely modular – providing more space and flexibility for managing top of rack infrastructure.

SOLID
Next level reliability

The Nexpand cabinets consists of a light but solid frame and doors that comfortably bear the weight of IT equipment. The sturdiness, the full integration of the locking system and the cabling are unique on the market.

SECURE
Keep your data safe

Nexpand guarantees the highest level of security by interfacing with the best platforms for electronic door locking, including high security cable management (integrated in the door) and tamper proof door mechanisms. Everything to keep your invaluable IT equipment safe.

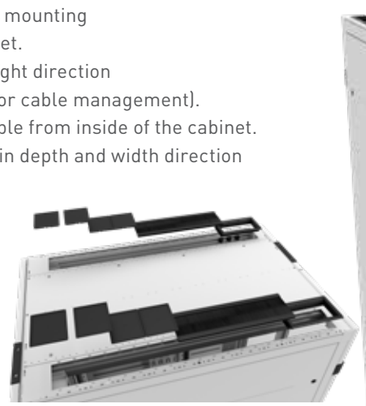
SUSTAINABLE
Next level energy efficiency

Sustainability is both embedded in the design of the product as well as in its functionality. Environmentally friendly materials, production and assembly processes are guaranteed ("Eco passport" – Profile Environmental Passport). The design of the cabinet ensures optimal airflow management. This results in optimal energy efficiency.

BENEFITS

WATCH ALL FEATURES: www.minkels.com/videos/nexpand

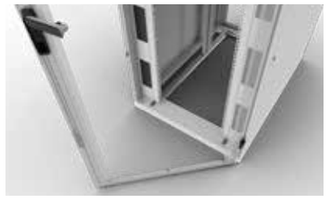
INTERIOR
- Frame offers unique flexibility through stepless mounting possibilities in all three dimensions of the cabinet.
- Threaded mounting rails in width, depth and height direction enable stepless adjustibility (ideal for example for cable management).
- Nearly all accessories and components accessible from inside of the cabinet.
- Integrated T-slots provide stepless adjustibility in depth and width direction (for example vertical mounting rail adjustment).

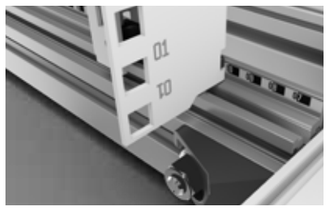


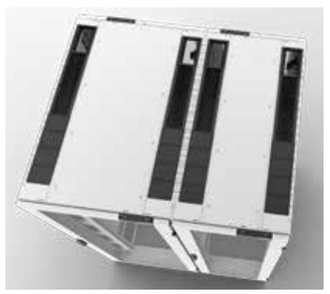
DOOR
- Full integration of the locking mechanism and cabling (in case of smart lock).
- Clean and minimalistic design.
- Easy door removal and installation.
- High level access security.

AIRFLOW
- Best in class air tightness.
- Keep flexibility in adjusting vertical mounting rails without compromising on air tightness.
- Upgrade the energy efficiency by adding an airflow package in a later stage is possible.

TOP-OF-CABINET
- Solid platform for installation top-of-cabinet infrastructure.
- Roof inserts follow a multiple of 100 mm.
- Nearly full-depth cut-out.
- Optimal accessibility for cabling.
- Optimal positioning for PDU's.







WHERE TO FIND MORE INFORMATION ABOUT NEXPAND?

We have various animations and documents that can help you to create a future-proof and energy-efficient data center.

PRODUCT ANIMATIONS:
Watch here how the cabinet is build and what makes it unique. www.minkels.com/videos/nexpand

WEBSITE: www.minkels.com/nexpand

BROCHURE & DATASHEETS:
www.minkels.com/downloads
www.minkels.com/technical-datasheets/nexpand

SPECIFICATION DOCUMENT:
www.minkels.com/specification-tools

Server Technology®
A brand of legrand®

Proven technology never dies

IT EVOLVES

Calvin Nicholson, Senior Director Product Management • Software Engineering, Legrand US

Let's plunge into the history of -48VDC! -48VDC power has been around since the earliest days of the telephone. But the need for -48VDC lives on!

BACK IN TIME

Back when not all homes received electricity provided by public utilities, telephone companies provided the power to run the phones. -48VDC was sent out from the central office to the individual's analog landline. Batteries in the central office kept the phones functioning even when the utility had a brief outage.

THE PRESENT

Today's telephones are digital, and rely on voice over IP (VOIP) going out on the lines of an internet service provider using servers and switches running on AC power, whether that is the local cable company or the stalwart AT&T. Meanwhile, many homes have 'cut the cord' and gone exclusively to wireless phone service provided by mobile network operators.

THE NEED FOR -48VDC LIVES ON

While the original users of -48VDC power no longer require it, the need for -48VDC lives on in a more distributed fashion. For instance, so-called 'light hybrid' cars have a secondary battery pack in them delivering 42-48VDC to run systems while the combustion engine is turned off at a stoplight. But more relevant to our business today is the use of -48VDC in remotely managed sites such as macro cell tower locations, 5G applications or other distributed ('edge') locations for cable TV providers such as Midco in the upper Midwest of the USA.

POWERING AND MANAGING MISSION-CRITICAL INFRASTRUCTURE

In this environment, Legrand Data Center Solutions also provides a range of intelligent -48VDC power distribution units suited to powering and managing mission-critical infrastructure, whether that is the core switching functions of a Cisco, Mellanox, or Infinera device, or just keeping the power on to the security system monitoring the doors, the cameras, and the physical environment for temperature and humidity*. ■

** The 'Switched -48VDC (2) 100A inputs (8) 10A & (4) 70A outputs' and the 'Switched -48VDC (2) 100A inputs (8) 20A outputs' are ideal for replacing the battery distribution fuse block (BDFB) often found in these locations.*

PRODUCT*CASE*

One integral platform for AC / DC within legrand group

THE BENEFITS OF -48VDC SOLUTIONS:

48VDC solutions let you:

- Distribute power to all equipment in the rack.
- Remotely reboot Core and Edge Ethernet switches.
- Measure power loads in Amps at each DC power output block.
- Use a variety of input and output amperages.
- Monitor 2 Temperature and 2 Humidity Sensors.

For more details on -48VDC, check out: www.servertech.com/solutions/telecommunications-solutions

By being better, more affordable, more efficient and, above all, more flexible – that's how Datacenter.com wanted to conquer the world of data colocation. The company is already well on the way to doing so at international level. For its data center in Amsterdam, Datacenter.com chose to work with Legrand's new Nexpand platform. CEO Jochem Steman explains why and reflects on the results so far.

CEO Jochem Steman

Jochem Steman, CEO Datacenter.com:

'We're the most difficult customer in the world'

Datacenter.com was founded four years ago with the idea of challenging the status quo. The aim was to revolve around maximum flexibility: 'data storage as a service' rather than long-running fixed contracts. The concept was a hit, and companies all over the world – from SMEs to large corporates – are now benefiting from Datacenter.com's services thanks to the company's data centers in Europe, the USA and Asia. The customers range from cloud providers, financial organizations, digital media and gaming giants to smaller e-tailers.

MAXIMUM FLEXIBILITY

Jochem Steman: "We realized that existing data center services were failing to meet customers' wants and needs. Companies need flexibility; they want to be able to scale data capacity up or down depending on their circumstances. We decided to address that need."

He didn't expect it to be easy, and it wasn't: "Besides being flexible, our services must also be completely reliable and secure, of course, and preferably affordable too. Moreover, the demand for data capacity is still rising – just think of how many more people are watching Netflix and the sudden growth in online schooling in these times of coronavirus lockdowns. People are also increasingly communicating by video and there is an incredible amount of content being transmitted back and forth. On top of that, users have come to expect high speed and ever-better data quality."

WITHOUT COMPROMISE

"End users are very critical and our customers are very critical, so we are too. From a supplier's perspective we're the most difficult customer in the world. We want nothing but the best quality, without compromise, simply because we can't afford to take any risks. We're the first company anywhere in the world to work with Legrand's new Nexpand cabinet platform. The racks have been custom-made for us. That added an extra element of uncertainty, because you know there's a chance of teething troubles – and there were a few, but nothing major. They were all resolved beforehand so that the cabinets could be installed correctly."

The Nexpand cabinet platform is located at the data center in Amsterdam, where Datacenter.com is substantially expanding its capacity. The data center itself is a huge 10,500 m2 warehouse, of which 5,000 m2 is in use at 100% capacity. It currently has enough room for 1,800 cabinets. Jochem: "We've already completed our first growth phase and we will soon be heading into the second. We're currently running an IT load of 3 megawatts fully continuously, and we're steadily growing towards 12 to 15 MW. Our data center is very energy-efficient; our power usage effectiveness (PUE) is 1.08. We make a point of cooling the heat generated by the servers as efficiently as possible."

CURIOUS ABOUT LEGRAND'S SOLUTIONS

"We were attracted to the Nexpand platform because of our specific needs. In Amsterdam we work with 54U, the biggest size of cabinet. We want to maximize the amount of IT equipment per cabinet; that's more efficient and better for the customer. Besides that, we'd had some issues with hot air leaking out of our existing cabinets. Our contact person at Server Technologies, which supplies us with power distribution units, alerted us to the new platform by its parent company Legrand. Although we try to stay loyal to our regular suppliers, we decided to contact Legrand because we were very curious about their solutions."

"The people at Legrand really had to convince us; we certainly didn't make things easy for them. But it's a solid company with production in Europe, which means good lead times – and that's crucial for us. They listened carefully to our wants and needs, and custom-built the racks in line with our requirements. As the first customer for this solution we're also serving as a pilot project to some extent, but we always give lots of feedback to all our suppliers so that we can improve together. The implementation went fine apart from a couple of mini teething troubles, and the platform is now fully up and running."

NEW EXPANSION

"As for the reactions from our customers, we've had nothing but positive feedback so far. It's a bit of an adjustment for some of them, such as those with a combination of old and new data storage. But all the space that we bought has already been sold, so we'll be expanding again soon. The next upgrade is scheduled for after the summer – and I'm pretty sure that means we'll be installing more Nexpand cabinets." ■

The Nexpand cabinet platform installed at Datacenter.com has a non-standard size (54U) that was specially made for the customer. The first delivery comprised 2 x 80 racks with containment (corridor).

www.minkels.com/nexpand
www.datacenter.com

Raritan
A brand of legrand

Whether you call it KVM (Keyboard, Video and Mouse switching), remote access or remote management, these solutions enable IT administrators, lab managers and users to remotely access and manage PC's, servers and computer-based equipment, typically over a network, such as a LAN, WAN, intranet or even the Internet. As the world-wide market leader in KVM-over-IP switches, Raritan has a 30+ year history of helping people access and manage their remote computer equipment.

REMOTE MANAGEMENT APPLICATIONS

inside and outside the data center

PRODUCT*CASE*

www.raritan.com/eu/products/kvm-serial/kvm-over-ip-switches/dominion-kx-iv-101

CONTEST

Raritan sponsored a contest giving customers the chance to win a free Dominion KX IV – 101 KVM-over-IP switch by sending their "application stories" about how they would utilize this product. Over 25 customers sent their application stories, both past and future applications. Here are three different applications.

APPLICATION #1: DATA CENTER SERVER ACCESS AT WORK AND HOME

Customer story: "We have over 32 servers in production. Some have iDRAC, and one has iLO, but many do not have a management card in the system. We do have a KVM switch, but it is not IP based, so when something needs to be managed, we have to keep going into the data center to work on it directly. An IP KVM would help with the ability of accessing it. Even when we are off premises – like on the way home from work or vice versa."

APPLICATION #2: REMOTE BIOS ACCESS TO AVOID A 450-MILE TRIP

Customer story: "We sent a new server to a remote site. A technician installed the server in the rack and connected power, KVM and network. After powering on the server, there was a problem with the RAID [disk] controller configuration. Because of the Raritan KVM switch, we were able to remotely access the server's BIOS and find the problem. Saved us a 450-mile trip!"

APPLICATION #3: REMOTE PC ACCESS FOR AN ELECTRIC UTILITY

Customer story: "I am looking for remote management of a single PC located in electric utility substations. This PC is in a "can" in a power pole transformer. The bottom of the can is a lens that houses a security camera. Each "can" is connected to the Internet via LTE and we can remote into the server. However, there are times where we need BIOS access to the PC. The only way is via a network-attached KVM switch which is why we are looking at Raritan's KX IV single port KVM-over-IP switch."

OTHER APPLICATION STORIES

Other applications included:

- Enabling telework for a global IT provider
- Remote data center access to assets 2 hours away
- Remote worker needs high performance access
- Branch office support by the central IT team
- A healthcare provider looking to do remote computer configuration

These application stories illustrate the breadth of applications for remote access and management, to avoid travel, increase productivity and provide the BIOS-level access and management. Applications are inside and outside the data center, including branch offices, remote facilities... and more! ■

Richard Dominach, Director of KVM Product Management Raritan

Legrand wins

INTERNAL SECURITY FORCES (ISF)

tender with local partner

The Lebanese Internal Security Forces (ISF) wanted to update their data center and centralize the servers in their headquarters. They launched a public tender inviting all main vendors to bid. DCS SAL was one of the main vendors. With many references across Lebanon and the region, DCS SAL has become a leading solution provider in the areas of electrical and mechanical engineering. Legrand Data Center Solutions and DCS SAL decided to partner together – aiming to fulfil the requirements of ISF.

ABOUT ISF

The Internal Security Forces Directorate (abbreviated ISF) is the national police and security force of Lebanon. The Internal Security Forces are general armed forces whose prerogatives cover all the Lebanese territory and its regional waters and airspace.

PRODUCTS USED

The suggested products were:

- Legrand structured cabling
- Minkels racks & containment
- Raritan smart PDUs
- Legrand UPS

A complete data center solution for ISF!

CUSTOMER*CASE*

PARTNERING

During different roadshows, DCS SAL got to know Legrand Data Center Solutions. After some additional site visits, DCS SAL became convinced that the Legrand data center products would be a great asset to the company – resulting in a partnership. This partnership led to winning the ISF tender!

GREEN LIGHT

The procedure to be approved as a data center supplier of the Internal Security Forces was not easy, because of fierce competition and very sophisticated specifications. DCS SAL and Legrand Data Center Solutions had to convince ISF to approve their products. Since Legrand has a premium quality image in Lebanon, ISF gave the green light to submit a bid. The partners worked together closely on this offer. Thanks to the fast reply and support of the entire team – DCS SAL, Minkels, Raritan and Legrand – the requirements of ISF were met. ISF evaluated the bids of all main vendors and Legrand and DCS won the tender; the quality versus price ratio scored best.

IMPORTANT PLAYER

Remaining was the execution. DCS SAL and ISF praise the ease of installation of the Legrand Data Center Solutions products compared to other brands: "Legrand has become an important player in the field of complete data center solutions. The challenge was to provide the best service and commissioning. This went smoothly and successfully – with a minimal need for technical support – resulting in an ongoing partnership with DCS SAL and a very satisfied customer." ■

White paper:

Smart Cities run on Smart Power

The experts of Legrand Data Center Solutions have published a number of white papers which can be used as a guide to creating a future-proof and energy efficient data center. In each edition of Data Center Insights, we enjoy sharing our accumulated data center knowledge with customers. In this edition, attention is paid to Raritan's white paper 'Smart Cities Run on Smart Power'. This knowledge document explores the critical role intelligent power distribution plays in making "smart" happen.

REQUEST 'SMART CITIES RUN ON SMART POWER'

Legrand Data Center Solutions has created several white papers to help you better understand products and integrations. Raritan's white paper 'Smart Cities Run on Smart Power' explores the critical role intelligent power distribution plays in making "smart" happen. The knowledge document can be requested at:

www.raritan.com/eu/landing/smart-cities-run-on-smart-power/

KNOWLEDGE

BECOMING SMART CITIES

A cooperative effort between city governments and private enterprise is leading cities to adopt the goal of becoming "smart cities." While the definition of a smart city depends on who you ask, the common understanding seems to be that a smart city provides for the real-time monitoring and control of the infrastructure and services that are operated by the city, thereby reducing energy use, reducing pollution, improving public safety, and improving the quality of life for the citizens and visitors of the smart city.

REQUIREMENTS OF SMART CITIES

Smart cities require vast arrays of widely distributed sensors and control devices dispersed throughout. In turn, both wired and wireless networks are deployed to join the sensors and control systems together. These systems gather, store, and process data, and then widely distribute the compressed information in a timely fashion to the point(s) where the information can be acted upon or consumed. Edge computing infrastructure handles time sensitive applications and data aggregation, while private and public cloud infrastructure provides general purpose utility computing, big data analysis, and long-term information storage.

INTELLIGENT POWER DISTRIBUTION

In smart cities, remotely managed power distribution provides a means of reducing power consumption, resetting disparate hardware systems, and providing localized environmental monitoring for both the control systems and the networking hardware that make a city "smart." Intelligent power distribution plays a critical role in making "smart" happen. The white paper 'Smart Cities Run on Smart Power' will further elaborate on this topic. ■

CHARACTERISTICS OF A SMART CITY

These are the characteristics of a smart city:

A smart city provides for the real-time monitoring and control of the infrastructure and services that are operated by the city

- A smart city reduces energy use
- A smart city reduces pollution
- A smart city improves public safety
- A smart city improves the quality of life for the citizens and visitors of the smart city

Just to name a few of the many benefits smart cities offer!

Sevel's data center

forms basis for daily production of 1,200 commercial vehicles

The SEVEL car factory at Atessa (Italy) is a joint venture between FCA and Groupe PSA, producing 1,200 light commercial vehicles every day. The assembly is guided by an informatics system which is capable of guaranteeing a reliability of 99.995%. Legrand Data Center Solutions has supplied numerous components necessary to realize the data center that coordinates all the sites' activities.

EFFICIENCY AND PRODUCTIVITY

The SEVEL product lines are active 320 days a year and make about 300,000 vehicles annually. The plant can make more than 17,000 different vehicle versions. According to Site Manager Angelo Coppola, the "small vans" of the past have nowadays become "cars with a large loading capacity" and must thus be equipped with every day comforts. Although daily production is 1,200 vehicles, the production is not sufficient to satisfy the demand. The company managers are continuously searching for solutions to maximize efficiency and productivity.

FROM ORDER TO ASSEMBLY

As soon as a purchase order is signed in any European concessionaire, the data and technical specifications are entered in the company management system; a computing tool which can define the necessary supplies of raw material and plan the production order. All the necessary information also arrives at the production lines, where in a few minutes completely different product versions are assembled – each of which is traced and monitored over its entire path on a site where more than 6,000 people work.

Poalo De Nardis (IT manager) and Floriano Monteduro (Legrand Data Center Solutions)

DEMANDING CHALLENGES

All this cannot take place without the support of the most innovative computer solutions, required to work without interruption. The term "always" is a real sort of obsession for Paolo De Nardis (ICT Manager at SEVEL) and his staff of experts. The ICT division is thus responsible for the entire data center. Or better, the "brain" of the factory. In recent years, the ICT department has been faced with ever more demanding challenges: to answer the need for greater productivity and to deal with the growing amount of data to be collected and managed locally. The real processing must stay close to the point where the data themselves are produced and the information is used, following Edge Computing logic.

COLLABORATION

FCA entrusted the creation of a new data center to N&C Telecomunicazioni. Making a new ultra-reliable data center in a few weeks was an enormous challenge, explains Gianluca Giannuzzi of N&C Telecomunicazioni. "We needed to find practical solutions to guarantee the operating continuity of the plants. At a complex and special site like Atessa and with the pressure of having to complete the work quickly, the collaboration with the SEVEL ICT team and with a vendor like Legrand Data Center Solutions was crucial." Gianluca Giannuzzi also enjoyed the completeness of the Legrand Data Center Solutions portfolio. "This allowed us to find all the necessary data center solutions in just one company. Furthermore, at a plant like Atessa, where we had to work particularly quickly and through the summer, having a single representative provided extra added value. In our case, this was Floriano Monteduro."

TWO MIRROR DATA CENTERS

Within a few months, the collaboration led to setting up two physically distant data centers (mirror and hot redundant) with the UPS segregated in rooms sealed off by fireproof walls and doors. Legrand Data Center Solutions' proposal included power supply, the equipment's electronic protection, racks, air-conditioning systems, monitoring and structured wiring solutions. This allowed the team to reduce implementation times – without ever having to compromise. The idea was to create two mirror data centers, with balanced loads – capable of guaranteeing the correct operation of the production lines even if one of them was not performing correctly. An objective reached respecting all the technical requirements which characterize the data center with the highest level of reliability possible today.

ENERGY EFFICIENCY, RELIABILITY AND CONTINUITY

FCA and N&C Telecomunicazioni chose to make use of the technology of the Minkels active cooling "direct expansion" and the Minkels aisle containment solution. These energy efficient aisle containment allow for the clear separation of hot and cold air. Resulting in a PUE (Power Usage Effectiveness) of 1.3. One of the lowest values attainable today, especially in a region of Italy with high environmental temperatures. Energy efficiency is only one of the indispensable requirements, however. Reliability and continuity of power supply must not be neglected. The team has thus developed a solution which features the 2N redundancy of each individual component and a check of the electrical and environmental values. The team chose for the Legrand InfraRack electric panels with the "BTicino TiFast" system, with hot hooking and unhooking of the individual thermal-magnetic circuit breakers. Gianluca Giannuzzi from N&C Telecomunicazioni explains: "The installation could be completed quickly, easily making even very complex electrical wiring in small spaces". Expansion and maintenance are simplified and can be safely carried out – even inside live racks.

AVAILABILITY OF DATA OF 99.995%

As well as redundancy, the ICT engineers needed to be constantly informed about the status of each individual parameter, so that they can act proactively. The choice was therefore made to integrate the Raritan PDU PX3. These innovative power distribution units measure in real time both the connected electrical loads and the microambient variables, such as temperature and humidity – communicating them also remotely through the Ortronics structured wiring network. The entire energy efficient data center now has an availability of data of 99.995%. This means a maximum interruption of only 48 minutes a year! ■

PRODUCTS IN USE

The main Legrand Data Center Solutions products in use are:

- Active cooling
- Caging
- Aisle containment and cabinets
- Air conditioning
- Structured cabling
- PDUs
- Electrical panels
- Automatic circuit breakers and auxiliaries

Resulting in an energy efficient and reliable data center!

A meeting of minds

Technical Excellence at Kao Data London One

Kao Data develops and operates advanced data centers for high-performance computing. Inspired by hyperscale and engineered for the cloud, AI and enterprise, they underpin the UK's innovation corridor with optimised and world-class digital infrastructure. Today, Kao Data has worked with Legrand to ensure that a new Life Sciences customer continues to benefit from a secure, resilient and highly available data center infrastructure solution. Comprised of six Technology Cells the deployment included a collaborative approach to cabinet design and installation.

Situated in the heart of the UK Innovation Corridor, the +£230m Kao Data Campus provides 150,000 sq. ft technical space, 40MW power for IT Equipment (ITE) and is served by a dedicated and redundant 43.5MVA power supply.

The completed site will comprise four 10 MW data centers, providing customisable architectures that begin at cell level, with specialised systems including High-Density Technology Pod's for compute-intensive applications such as High Performance Computing (HPC), Artificial Intelligence (AI) and Machine Learning (ML); bespoke Technology Suites and a Build-to-Suit Model, offering customers the ability to work collaboratively with Kao Data to fund, design, build and operate one of the new facilities on campus.

Through technical excellence Kao Data continues to drive design innovation, increasing reliability and supporting 100% availability at reduced total cost of ownership. Dynamic load tracking at the campus site ensures high energy-efficiency with ultra-low PUE 1.2, even at 20% ITE utilisation. The company has made the added commitment to sustainability by powering its award-winning data centers with 100% renewable energy, when fully operational (43.5MVA) this will reduce CO2 emissions by +80,000 tons per annum.

Kao Data London One is the first purpose-built wholesale colocation facility in the UK to use Indirect Evaporative Cooling (IEC). IEC indirectly uses outdoor air to cool hot air from inside the data center. Hot IT server exhaust air is drawn away from the technical space and passes through a specially designed series of heat exchangers. The heat from the hot technical space is then transferred to the outside and expelled without any of the external air entering the building – removing the threat from air pollution hazards such as smoke, airborne salts and other harmful chemical compounds.

Kao Data London One is also one of the first data centers in Europe to implement the monitoring of gaseous contaminates within the technical space, reducing the risk of harmful airborne components – which left undetected, can significantly contribute to circuit board corrosion and the potential failure of IT equipment.

THE ROLE OF DATA CENTES IN LIFE SCIENCES

Recently, Kao Data signed a new customer contract with a large not-for-profit organisation based in the Innovation Corridor. The company is an international research infrastructure and global leader in the storage, analysis and dissemination of large biological datasets. This is a key development in Kao Data's strategic goal to become the leading provider of compute capability to the UK Innovation Corridor and its Life Science community.

The contract will initially utilise 1.5MW of capacity across six Technology Cells within Kao Data London One's first technology suite (TS01), offering the ability to scale quickly into the new development into the second Technology Suite (TS02) as future demands require.

The Customer provides some of the worlds most comprehensive open access biological data, used by millions of researchers in academia and industry globally. To-date, their data centers store over 270 Petabytes (277,000 Terabytes) of raw storage; an amount that continues to grow daily, as new information from life science research and genomic sequencing is gathered, which aids scientists in the quest to understand our world and cure mankind's most life-threatening diseases.

Although they are a research organisation with global reach, they required local data center resources and Kao Data's London One facility is situated a short distance away, down the M11. This provides easy access for the Customer's Data Centre Engineers, ensuring continuity of in-house support, uptime for data users and a significant saving in operating expenditure (OPEX).

Additionally, the location of the Harlow campus enabled decision makers to visit the site and build relationships with the Kao Data team, who demonstrated the facilities industry-leading design, award-winning CSR aspects and OCP-ReadyTM capabilities. Its ultra-low PUE, reduced carbon footprint and commitment to 100 percent renewable energy sources provide a highly energy efficient

environment with a low cost of operation, which played an equally important factor in the selection process.

CABINET COLLABORATION – A KEY TO SUCCESS

Kao Data was one of six companies invited by the Life Science organisation to attend a workshop ahead of the final awarding of the data center contract, where its consultative approach to pre-sales, allied to its partnering approach with both clients and its supply chain, was a further, significant differentiator. Additionally, Kao Data was able to meet the power requirement for 15kW per rack and higher in some instances.

After they were awarded the contract, Kao Data visited the client's existing data center to gain insight and understanding into what was required from the new facility. Importantly, the company was flexible to new approaches when it came to the design of the new data center solution.

FLEXIBILITY KEY HALLMARK

Indeed, flexibility was a key hallmark of the complete project, as demonstrated by the relationship between Kao Data and its chosen cabinet supplier, Minkels. Working with its chosen data center 'fit out' design, build and installation partner, Datalec Precision Installations, Kao Data placed an order for 154 cabinets, each 50U or approximately 2400mm high by either 600 or 800mm wide by 1200mm deep, split across the six enclosed hot aisle technology cells.

WORKING TOGETHER

Crucially, the transparency of both Minkels and Datalec in working with Kao Data highlighted a potential issue around the manufacturing and delivery of the cabinets. All three organisations worked together to finalise the bespoke cabinet design, aware that this needed to be completed to a deadline in order to ensure that the cabinets could be manufactured and delivered on site ahead of the factory's summer shutdown. In actual fact, the order was delivered to Kao Data three days ahead of the deadline.

CHOOSEN SOLUTION

Design-wise, bearing in mind the customers not-for-profit status and the need to demonstrate value for money, it was agreed that the individual cabinets would be supplied without doors. The Minkels rack airflow system, combined with the use of blanking panels, enabled this cost-saving measure to be implemented.

"They made it work for us."

The Minkels cabinets form the main part of what is an enclosed hot aisle solution with vertical clear panels, each 1200mm in height, mounted on the rear of each cabinet and across the hot aisle end doors. The enclosures incorporate the existing lighting trunking and ceiling suspension grid.

The Minkels cabinets are 50U high. The 600mm wide cabinets are used for the servers, while the 800mm cabling units sit mid-row, configured to allow cross cabling.

All of the cabinets are configured to include an air seal kit, so there is no cross-contamination from the cool air delivery within the data hall and the hot air exhaust from the enclosed aisles.

An innovative feature of this Kao Data project was the roof system, a bespoke variation of the Minkels Upstand solution. Clear, polycarbonate, fluted panels sit on a standard Minkels roof system and are secured to the ceiling tiles with a U-section frame, housing 10mm securing bolts, secured into the ceiling support fixing channels.

Additionally, the cabinets were able to adapt well to the requirements of being positioned on a solid concrete floor (as opposed to a raised floor design). The cabinets' seals and skirting edges are good for levelling, with foam used to create the sealed aisle containment. Overall, the Minkels cabinets provide the necessary flexibility to be levelled on a power floated, concrete data center floor.

Within the suite, the cabling is run overhead in a two-tier, colour-coordinated basket tray, with the PDUs also being colour-coordinated for each of the 3 distributed redundant power supplies – A, B and C. The doors located at the end of the aisles are smooth in their opening and soft-close and are designed specifically to work well with the Minkels cabinets and have been branded with the customers logo. ■

POSITIVE CUSTOMER FEEDBACK

Kao Data's CTO, Gerard Thibault, explains: "We were very happy when we saw the neatness of all the cable runs and the colour-coordinated basket trays - a testament to the importance of the pre-sales technical workshops. Other contractors have all said that they are the neatest they've seen."

Howard Spooner Kao Data's Customer Implementation Manager explains: "In terms of the 50U height of the cabinets, Minkels provided exactly what we wanted in terms of overall cabinet configuration. They made it work for us and most importantly for the Customer, where other manufacturers may not be so flexible.

Gerard explained "The product itself is light coloured, and therefore light reflective; the flexibility of the internal cable ways is very good as is the overall rigidity and feel of the product. Rigidity can be an issue with high density servers, but not with the Minkels, four post design."

Howard adds: "Minkels continues to meet our required lead times, they demonstrate design and installation flexibility, and offer us a great solution. For this project, the timescale and procurement process was particularly critical, with Minkels responding quickly to meet the customer deployment schedule."

Howard was also impressed with Datalec and Minkels management of the project. He explains: "Throughout the project there was great flexibility and a 'can do' attitude, from the early design stage, right through the installation and final commissioning, whether from Datalec, Minkels or Corning who provided the pre-terminated fibre cabling. At one point during the project, the containment panels were sized for 46U high cabinets, not 50, but Minkels worked tirelessly with their supply chain to resolve this problem within a very compressed timescale."