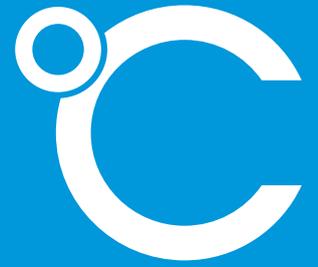




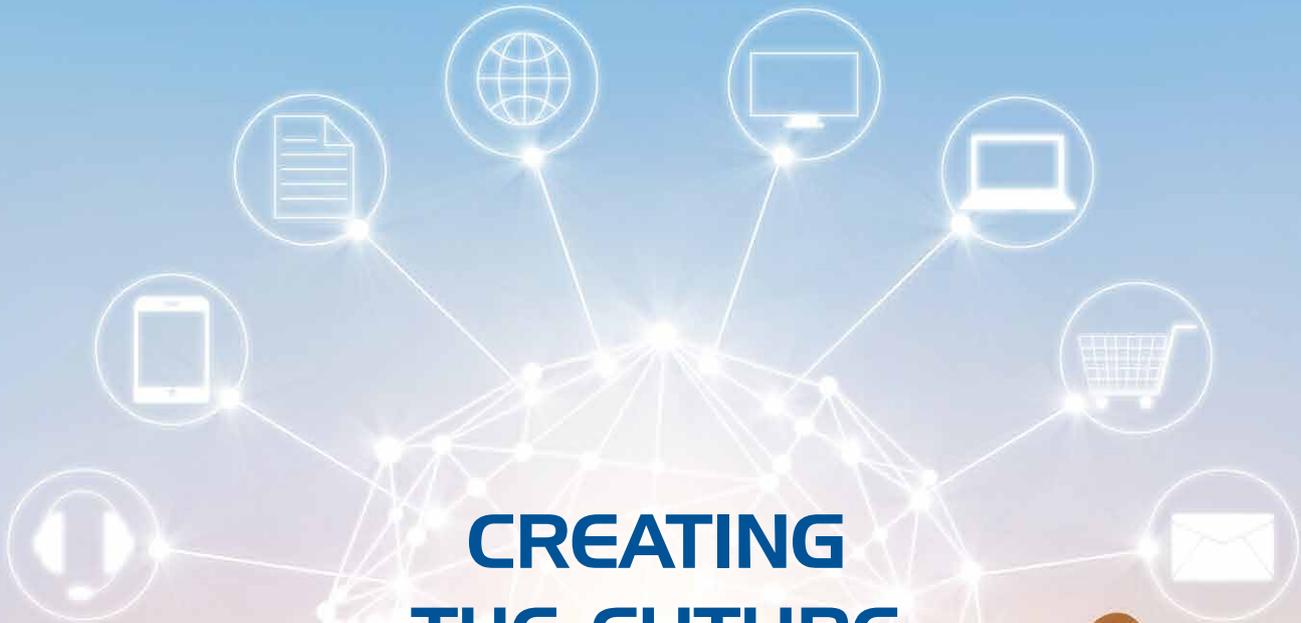
Fall 2018  
THE NEWSLETTER  
FROM DAIKIN REEFER



YEARS OF QUALITY  
DAIKIN REEFER



DEGREE CELSIUS



**CREATING  
THE FUTURE  
TOGETHER**



# Welcome

From Shin Furuta, President of Daikin Reefer

**W**elcome to the Fall 2018 Edition of the Daikin Reefer Newsletter, issued to coincide with the annual Intermodal Europe event. Intermodal Europe takes place this year in Rotterdam on 6-8 November and it's a very special occasion for us as we will be celebrating our 50th anniversary in reefer container technology. We look forward to welcoming our customers, partners and industry colleagues to mark this historic milestone.

As you can read in this newsletter, and also in our Spring 2018 edition, Daikin is honoured and grateful to have played a part in the birth and global growth of containerized trade in refrigerated cargoes.

*“Ever since our journey started 50 years ago, we have kept sailing this industry, and its fierce ups and downs, together with our customers.”*

During these years throughout, we have always challenged the technological status-quo, with Daikin Electronic Container Operating System (1971), hot-gas defrosting (1982), R134a support (1994), scroll compressor technology with our LXE series (2001), Daikin Temperature Management System for energy efficiency (2005), and DC inverter compressors with our ZeSTIA series (2011).

Today, global maritime trade in food, flowers, pharmaceutical, and other temperature-sensitive good is on a strong growth curve. That is good news for all of us involved in this exciting industry.

The demand for CA transport continues to grow, to answer the increasing need for transporting a variety of perishable goods more economically and further in distance, driven by the diversification of food across borders.

In this edition you can read about some of the latest companies to adopt Daikin Active CA, including CMA CGM, Chiquita Brands and ONE.



While the technological developments have been driven by the dynamic of market demand, our customers' needs are not limited to climate control capability. The awareness for protecting our environment is rising, with new regulations coming into effect such as the F-gas regulation in Europe, calling for lower GWP refrigerants for container refrigeration systems. In this edition you will also find out about our commitment to protecting the environment. We will be introducing R513A as a lower-GWP option to our line-up of reefer containers from the second half of 2019, as well as a modification kit to replace R134a as currently charged in reefer containers.

We have continuously improved and refined our refrigeration technologies; to provide solutions to our customer and the industry for generations. We are proud of providing better and better refrigeration systems and service to our customers' satisfaction, made possible by not only Daikin working as one team, but also with the support of all of our service dealers and partners throughout the world.

Fifty years ago, few could have imagined the huge impact that the refrigerated container would have on how our world trades and consumes perishable and temperature-sensitive goods. During our journey over half a century, we have created new values by anticipating future needs of customers and addressing their problems. We have increased the range and precision of temperature control, along with DECOS electronic controller, to allow more variety of perishable cargo to be transported. To minimise cargo loss, we've improved reliability with easier maintenance design, including unique back-up functions, and application of scroll compressors, which was not seen in the industry at the time. Power consumption has been continually reduced by DTMS algorithm. Energy efficiency

has been significantly improved with inverter technology. Recently, we've introduced Active CA with unique Vacuum Pressure Swing Adsorption system, to further expand the variety of transportable cargo and transit duration with unparalleled freshness.

*“It will be difficult to predict what refrigerated transport would look like 50 years from now, perhaps even more so than it was to predict the realities of today 50 years ago.”*

Although Daikin possesses state-of-the-art temperature and climate control technology, as well as refrigerant technologies, more than anything else, we have the support of our partners and customers all over the world. By listening to our customers' problems one by one, and finding solutions together, we are confident that we will continue rowing together in harmony, overcoming new waves of challenge for another 50 years.

We look forward to creating the future together for the benefit of people, planet, and progress.



# Daikin history

## Daikin Reefer celebrates 50 years of market-leading reefer innovation

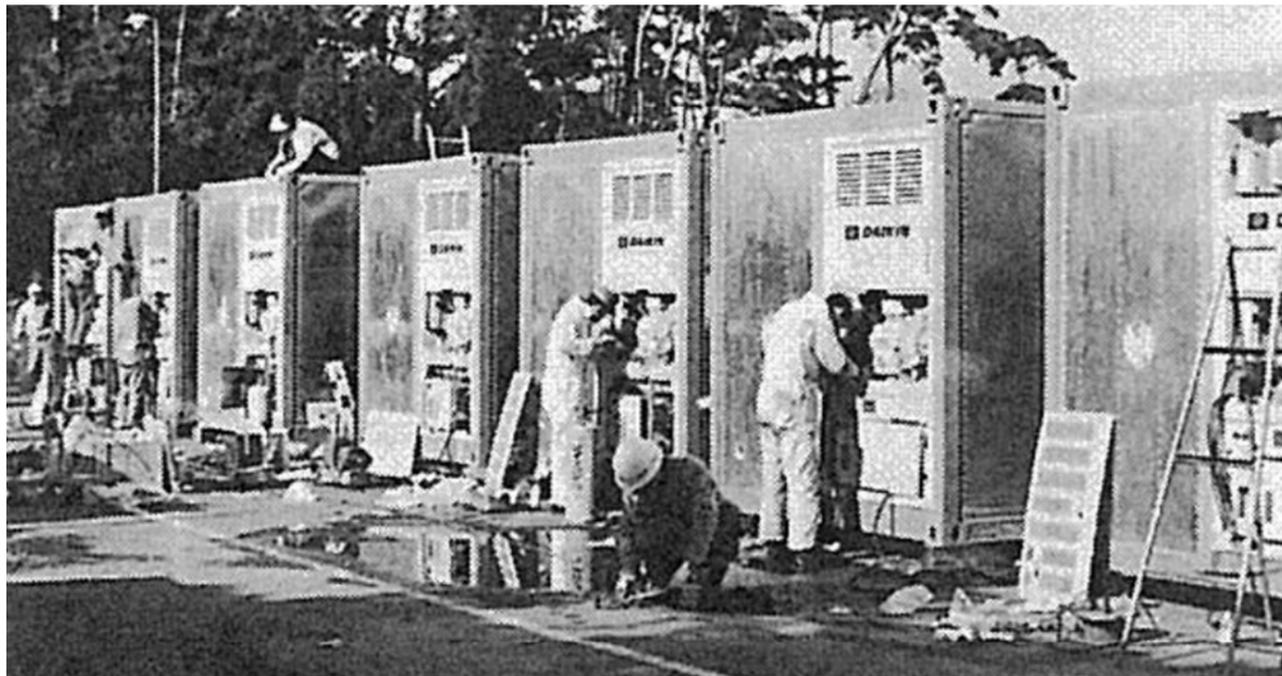
In September 2018 Daikin Reefer proudly celebrated its 50th anniversary. Central to the evolution of the refrigerated container market since its beginnings, Daikin Reefer was one of the first major reefer manufacturers in 1968 and we have maintained our position as a leading industry innovator ever since.

As a leading global supplier of container equipment, we have supplied over 250,000 units to more than 300 shipping lines and leasing companies across the world. Our customer base continues to grow year-on-year in both the operating and leasing market sectors. As global populations and average salaries grow and as free trade agreements enable products to be transported between more countries than ever before, our reefer technology ensures that consumers worldwide have access to quality, perishable produce that has travelled long distances. From fruit, vegetables, meat and fish, to wine, dairy products, flowers and even pharmaceuticals, Daikin Reefer's commitment to cargo care over the past 50 years has continuously pushed the boundaries of refrigerated transportation to enable the carriage of new cargoes on diversified routes.

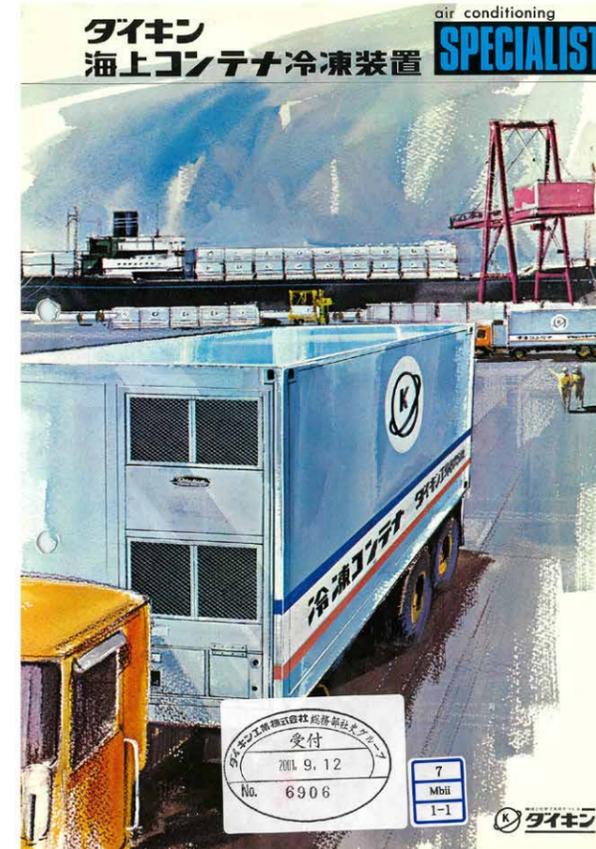
*“Even after 50 years, Daikin Reefer remains at the forefront of the industry as the reefer segment continues to expand, helping both shippers and shipping lines to access new markets, expand trade opportunities, and deliver added value to their customers.”*

*Mr Shin Furuta, President, Daikin Reefer*

One example of Daikin Reefer's commitment to quality, reliability and innovation is our proprietary Daikin Active CA (controlled atmosphere) technology. The only active - rather than passive - system on the market, Daikin Reefer's latest Active CA technology enables food and other sensitive, perishable produce to be transported in optimal condition for longer periods of time, extending shelf life and opening up more market opportunities for shippers and shipping lines.



Installing the first generation of reefers to containers



### Daikin's first catalogue

of time and over greater distances, creating new revenue streams for shippers.

With advances in technology, shipping is now capable of transporting cargoes that previously had to be carried by expensive air freight. Daikin's Active CA is providing shipping lines with the capability and versatility needed to better compete for new cargoes, such as cut flowers, asparagus, custard apples and strawberries. And shippers are benefiting from the cost reduction achieved by sea rather than air transportation.

As Mr. Shin Furuta, President, Daikin Reefer concludes: "Known worldwide for the reliable carriage of frozen and chilled cargoes, Daikin Reefer remains wholly committed to supporting shipping lines and shippers in protecting cargoes, safeguarding quality, and achieving efficiency over the next 50 years and beyond."

Daikin Reefer will officially mark its 50th anniversary with celebrations at Intermodal Europe, 6-8 November 2018, in Rotterdam and would welcome visits by customers and industry colleagues at its booth C40.

In addition to high respiring cargo, with Active CA it is now also possible to transport products with low respiration rates that are generally considered difficult to transport under passive CA. By reducing the oxygen level without relying on cargo respiration, Active CA can be used regardless of voyage length to effectively transport the broadest spectrum of perishable cargo: leafy vegetables, blueberries, cherries, lychees and organic grapes with a low respiration rate for example, together with produce such as avocados, bananas and cut flowers that have a higher respiration rate.

Unlike passive CA, which relies on produce respiration, Daikin's Active CA delivers nitrogen rich gas to the reefer container with inbuilt equipment, reducing oxygen density rapidly. This puts the fresh produce to "sleep" in a matter of a day or so, leading to longer shelf-life at the destination. During transportation, produce loses its water content from respiring. Active CA's puts the produce to sleep quickly, minimising loss of water content and preserving its freshness for longer. Critically for produce such as avocados, bananas and cut flowers with Active CA this can be done in less than half the time when compared to passive systems which means the produce can be transported for longer periods

# CA Update

## CMA CGM launches CLIMACTIVE using Daikin Active CA

**A**t the recent Asia Fruit Logistica in Hong Kong, CMA CGM announced the launch of CLIMACTIVE, the most advanced technology for the transportation of highly sensitive fruits and vegetables, using Daikin's Active Controlled Atmosphere (CA).

CMA CGM has always been dedicated to bringing innovation to its services ensuring it is continually able to both meet and exceed customers' expectations. To offer the most advanced shipping solution for the most sensitive fresh fruits and vegetables, CMA CGM has opted to equip part of its refrigerated container fleet with Daikin Active CA, a reliable and efficient Active CA solution.

Eric Legros says:

*"The launch of CLIMACTIVE was made possible thanks to the absolute trust we have in Daikin's Active CA technology, and key to the success of this launch has been the excellent cooperation between CMA CGM and Daikin's expert team."*

CLIMACTIVE combines CMA CGM's extensive reefer expertise and Daikin's innovative Active CA technology to produce the ideal solution for customers transporting fresh fruits and vegetables, particularly in the following cases:

- Produce with a long transit time (e.g. mango, snow peas)
- Organic fruits and vegetables

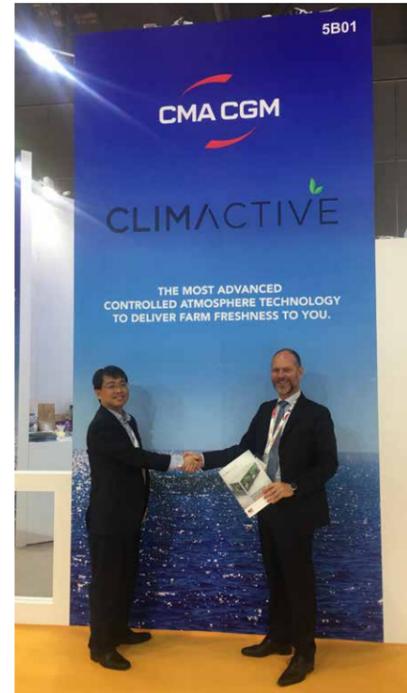
- (e.g. bananas, grapes)
- High added value products (e.g. blueberries, asparagus)

CLIMACTIVE with Daikin Active CA ensures customers get the best possible performance from their reefer service, allowing them to maximise their competitive edge. The technology creates the opportunity to service destinations that were previously beyond reach for these cargoes, as fresh fruits and vegetables can now travel in optimum condition for a longer transit time. This means less waste, better product quality and creates new markets available for exportation. The service also allows customers to uphold their green credentials through employing a natural and environmentally-neutral technology solution.

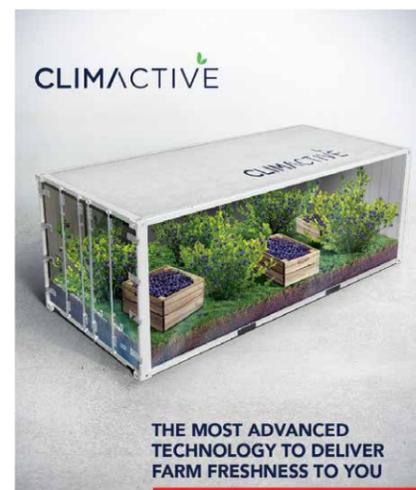
### Why Daikin's Active CA is so effective for CLIMACTIVE

CLIMACTIVE needs an innovative and effective active CA technology to ensure optimal performance. Daikin's Active CA provides the capability which enables CLIMACTIVE to go a step further in driving real market development in the transportation of fresh fruits and vegetables.

CMA CGM has the second largest global reefer fleet with 385,000 TEUs of reefer containers and 288,000 reefer plugs. The company's operational excellence relies on truly global coverage, the ability to offer a greater variety of services and better climate control. The launch of CLIMACTIVE with Daikin's Active CA reflects the excellent cooperation between CMA CGM and Daikin in ensuring customers always receive the best possible service.



The CMA CGM team launches CLIMACTIVE at Asia Fruit Logistica



CLIMACTIVE is ideal for transporting green leafy produce over long distances

# CA Update

## Driving growth in the reefer market with Active CA technology

**I**t has been an historic year for ONE, bringing three companies with a strong history in the reefer sector together to form the one of the largest container shipping company in the world. We spoke to Mr Bhuyan Bharadwaj, Senior Manager Global Reefer Business planning, ONE, about its new COOLVantage service offering and how it will be working with Daikin to roll out Active Controlled Atmosphere (CA) across a number of its containers to drive growth in the reefer market.

Emerging from the legacy of three leading Japanese liner companies, ONE is currently one of the top global carriers in the containerized reefer market. It has one of the largest and youngest reefer fleets in the world, equipped with the most advanced technologies designed to handle perishable cargo demand. Having recently ordered 14,000 new reefer containers with cutting-edge technology, ONE has reinforced its commitment to providing industry-leading transport solutions for perishable cargo trade.

*"Globally we have witnessed a steady demand for controlled atmosphere technology which is the most effective method to prolong the shelf life and maintain the quality of fresh produce. In ONE we see this as a good opportunity to enhance the trade of perishable goods and expand into new markets and, as part of the COOLXtendCA+ service, Daikin's Active CA technology helps us to achieve this goal," says Mr Bhuyan. "Continued investment is crucial to growth in this market, and that's where we will be focusing."*

In September this year, ONE announced the launch of its new COOLVantage service offering which includes reefer containers using Daikin's Active CA technology. The company will be using COOLXtendCA+ to open new market opportunities and create new trade routes that will drive real growth for shippers and growers.

"Where commodity values are high," explains Mr Bhuyan, "for example for produce such as blueberries and avocados, care and attention needs to be paid to how the cargo will be managed in transit to ensure it reaches its destination in optimal condition, which is of course of huge benefit to our



customers, the shippers. Currently, Daikin offers the only Active CA solution in the market which ensures atmosphere is actively and precisely maintained throughout the voyage".

Daikin's Active CA is able to quickly reduce the respiratory rate of fresh produce, keeping the cargo in optimal condition throughout the duration of its journey. The technology also reduces weight loss and allows shippers to manage the condition of the cargo more efficiently, which in turn safeguards its value.

Active CA is by far the most advanced technology in controlled atmosphere business segment," says Mr Bhuyan. "Our key focus will be on enhanced service and innovation, supported by a highly professional and experienced staff in sales and customer service as well as on technical side. Employing innovative technologies like Daikin's Active CA will allow us to stay true to our core values of quality, reliability, innovation and customer satisfaction."

"The future of container shipping is waiting to be explored," concludes Mr Bhuyan, "and we're excited to explore it!"

# Customer focus

## Chiquita places order for 500 Daikin ZeSTIA units fitted with Daikin Active CA



**Chiquita Brands has decided to add Daikin's ZeSTIA units to its fleet of reefer equipment and has placed an order for 500 units, all fitted with Daikin Active CA technology.**

"We have had some ZeSTIA units on trial and we have conducted several tests and also shipped the units from Costa Rica and Ecuador to North Europe and Scandinavia. We have confirmed the reliability and easy operation of the ZeSTIA model, but we have also evaluated the performance of the Daikin Active CA so are pleased to add this technology to our reefer fleet" said Mr. Stefano Di Paolo – President of Great White Fleet.

Mr Katsuhiko Tetsuya, Director of Reefer Container Division from Daikin added "We are very proud to add Chiquita to

our long list of customers using Daikin reefer equipment and our Active CA technology. The Chiquita brand is renowned worldwide for excellence and we are proud to be working with the Chiquita team."

Textainer, one of the world's leading container lessors, with a diverse fleet of containers including reefers that are available for purchase, sale or leasing, delivered the sale of the Daikin units to Chiquita. "Textainer was delighted to partner with both Chiquita and Daikin on this requirement for 500 ZeSTIA units, as Chiquita undertakes its fleet renewal program by introducing reefers with the latest technology to ensure optimal turn-out of its perishable cargo", said Mr John Simmons, VP Refrigerated Containers and Americas.



# Customer focus

## Happy Birthday Daikin Reefer from CMA CGM



**As CMA CGM celebrates its 40th birthday this year, and Daikin Reefer our 50th, we spoke with Mr Joel Gentil, Senior Vice President, Container Logistics and Intermodal, CMA CGM, to get his views on CMA CGM's long-standing partnership with Daikin, and what it means for the future of reefer container shipping.**



**Mr Joel Gentil, Senior Vice President, Container Logistics and Intermodal, CMA CGM**

digitalisation, blockchains and a reinforced requirement from our customers for full, transparent and integrated services," explains Mr Gentil. "Within our CEO's priorities are digitalisation, but also customer service through his customer centricity programme, which puts our customers at the centre of our development."

Vision, Initiative, Imagination, and Integrity are CMA CGM's core values. The company was founded in 1978 by Mr. Jacques Saadé and we are pleased to congratulate CMA CGM on celebrating its 40th birthday this year.

On his maritime career, Mr Gentil commented: "I had the chance to start my career in shipping in 1988 with CMA

We are witnessing an era of consolidation within the container industry with the introduction of alliances such as the Ocean Alliance, of which CMA CGM is a founding member and one of its major players. Alliances allow the container industry to rationalise transportation to certain areas of the globe, increasing efficiency and profitability.

"We believe our industry is on the verge of major changes with

CGM; CMA at that time to be more precise. Mr. Saadé gave me the opportunity to grow within his company since. Over a 20 year period I have held five positions: Owner's Rep in the UK, Deputy VP Logistics and Intermodal, Secretary General, VP CMA CGM French West Indies Lines, and today, Senior VP for Container Logistics and Intermodal."

Daikin has been a long-standing trusted partner in CMA CGM's reefer development. One significant milestone in this partnership is the 10,000 Daikin LXE units CMA CGM added to its fleet last year, part of which were fitted with Daikin Active CA.

"The quality and reliability of Daikin's Active CA, combined with the company's understanding, flexibility and capacity to adapt to our requirements, has allowed us to stay at the forefront of the industry", says Mr Gentil. "We believe the newest technologies, improvements and innovation will allow us to develop reefer transportation to new types of products, new cargo, or new regions, and enable us to manage our fleet more efficiently with remote acquisition of more and more data during the transportation phase, as well as the maintenance / PTI phase."

Upon becoming CEO, Rodolphe Saadé fixed the strategy for the years to come for CMA CGM, laying out key priority areas of focus, including:

- A "customer-centred" Group, providing our clients with innovative partnerships;
- A maritime, but also inland and logistic development focus;
- Innovation and digitalisation, at the heart of the directions taken by the Group;
- A strengthened human expertise, combined with an "agile" internal organisation.

"Through his leadership but also his personal behaviour, Jacques Saadé showed the way to all of us," explains Mr Gentil. "He would make you realise that what you consider impossible is often the limits you impose on yourself as the result of your culture, your fear or lack of confidence. He taught us how to go beyond these limits."

# Service update

## Daikin welcomes Ivan Romero and Jill Lin



Ivan has joined the Daikin team as Regional Service Manager for Mexico, Central America and the Caribbean. Based out of Mexico City, Ivan started his career in the shipping industry in 1998 working for APL. Most recently he was Maintenance and Repair Manager for APL,

specializing in controlled atmosphere shipments and worked alongside Daikin's Mr Ah Goh to conduct avocado seminars for the Mexican growers to advise them on how to ship perishable products. During that time he was also general manager of an APL joint venture that provided maintenance and repair services for reefers and containers for some of the most important shipping lines in the world including Maersk, CMA CGM, Hamburg Süd and Hapag Lloyd.

As Regional Manager, Ivan is responsible for providing support and technical assistance to service dealers, delivering training seminars and ensuring spare parts are delivered on time. "I'm tremendously happy to be part of such an experienced service team that is committed to

excellence and exceeding customers' expectations", says Ivan. "I know for a fact that Daikin has made some of the best Active CA equipment in the market. I know there is a lot of room to improve ourselves, one day, I'd like to see Daikin as number one". In his free time, Ivan enjoys sports including flag football, swimming and hiking.



Jill has joined the Daikin team as Reefer Care Manager in the Global Marketing and Service Department. Based in Taiwan, Jill is responsible for supporting the growing demand of speciality cargo and providing support services for the After Sales Service team. Jill previously worked in reefer sales and

has knowledge of reefer operations and trade support. "It is my honour to join the Daikin Reefer team as they work to expand their market share, in particular their Active CA market share. Hopefully I can contribute my knowledge to grow the Asian fruits CA carriage revenue and of course provide support services for the after sales Service team" says Jill.

## Daikin's Global Service Network provides customers with unrivalled 24/7 support

Daikin is committed to providing excellent service levels for its customers across the globe, 24 hours a day, 7 days a week. With our network of 15 spare parts distribution centres, supported by nearly 500 service network points and our reefer service engineers, we ensure service needs are met around the clock, around the world.

**Our 24/7 Service Support contact options**  
**Call: +61 3944 89680 Email: [daikin-service@daikinreefer.com](mailto:daikin-service@daikinreefer.com)**  
**Website: [www.service.daikin.com/reefer/contact.html](http://www.service.daikin.com/reefer/contact.html)**

## Daikin's 10-year strong partnership with IRS International (IRSI)

IRS International (IRSI) became part of the Daikin group in 2008. Based in Australia and New Zealand, the company boasts 70% of the Australasia market, giving it the number one spot. When first established in 1984, IRS focused on providing reefer services exclusively but has recently opened several new divisions as the company has expanded, adding Container Sales and Commercial & Electrical to its portfolio of services. In 2018, IRSI celebrates its 10th anniversary and the company is at an exciting stage in its growth and development. The IRSI team is now dedicated to providing service to both the international and domestic refrigerated container industries. Since 2011, the company has been led by Managing Director Peter Labbad who started at IRSI as an apprentice in 1988.

With over 130 employees, IRSI has set its sights firmly on cargo care excellence, by providing the largest service,



**IRSI Managing Director Peter Labbad**

maintenance and repair network in Australia, New Zealand and Dubai, as well as around the clock reefer monitoring services. The IRSI team is responsible for the Daikin Reefer parts centres in Australia, New Zealand and Dubai, and so supports Daikin Active CA Training, trials and installation to ensure excellent levels of customer service for Daikin reefer customers.

The Commercial & Electrical Division now offers installation, repair and maintenance services for commercial refrigeration and air conditioning systems. Most recently, the company started offering electrical work services too, now providing customers with a 'one-stop shop' for coldchain requirements from purchase through to



installation, maintenance, repair and monitoring.

IRSI's Container Sales Division sells container boxes in and around Australia and New Zealand for both dry and reefer routes.

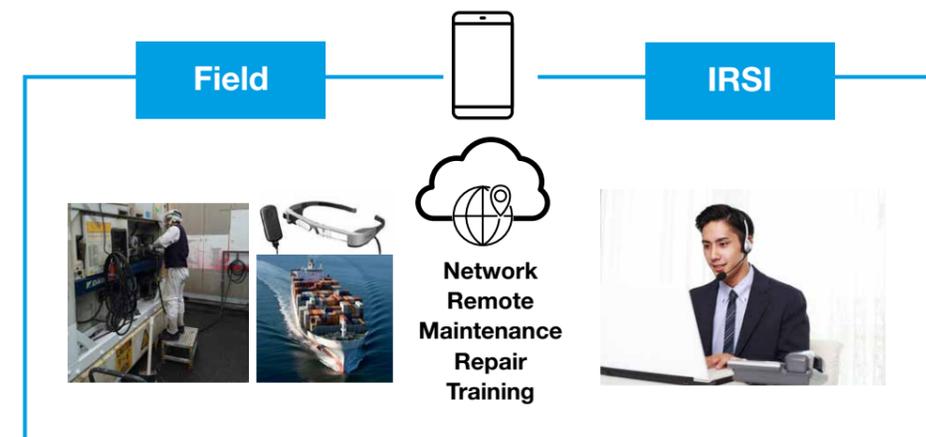
IRSI has developed a mobile device app to deliver even more efficient services to its customers: the app enables service updates and job technical information to be registered per container and shared with the customer by the IRSI service technicians.

The IRSI team is now considering how best to utilise Internet of Things (IoT) technology to provide new remote support solutions to its customers. Until now, communication methods with customers have been limited to email and telephone and IRSI recognises how important it is to use technology to improve communication and support. The team is currently conducting a trial of 'Smart Glass' functionality that will enable remote audio and visual support for its customers. For example, the IRSI Field Technician is on site with the customer and wearing special Smart Glass glasses, is able to communicate via live video to the service desk at IRSI to show broken parts and then receive repair instructions from the service desk team. Alternatively, the Field Technician can also demonstrate repairs to customers using live video. The IRSI team would be happy to test this innovative service solution with customers at this trial stage.

### About IRS International

IRS International is a specialist organization dedicated to providing superior service to the international and domestic refrigerated container industries. IRS provides the largest service, repair and spare parts network in both Australia and in New Zealand.

For more information visit [www.irs-worldwide.com](http://www.irs-worldwide.com)



# Daikin turns 50:

We celebrate 50 years of excellence



As Daikin celebrates its 50th anniversary year, we invited members of the wider Daikin team to give us their views on reaching this milestone, which memories from their career at Daikin really stand out for them, what the Daikin brand signifies and their hopes for Daikin's continued success in the future



**Ayumi (Matsumura) Okuma**

**Manager of Global Refrigeration Group, Products & Components Division, Global sales for Daikin Reefer Unit, ITOCHU Metals Corporation**

I am Ms. Ayumi (Matsumura) Okuma, Manager of Global Refrigeration Group, Products & Components Division, Global sales for Daikin Reefer Unit, ITOCHU Metals Corporation. Before joining ITOCHU, I worked for international container leasing companies for 14 years. I love the container business! I would say that Daikin is currently entering exciting times as our Active CA technology provides the only active system in the industry and it is making a huge, positive contribution to the movement of perishable goods around the world: it means more products can reach more countries and more people with less food lost globally. From an innovation perspective, there is no better example of Daikin's expertise than the introduction of the scroll compressed LXE10E series in 2001: it is extremely reliable and easy to repair and in the global reefer market, easy and cost-effective maintenance and repairs are essential.



**Arjan Bezemer**

**General Manager of Daikin Refrigeration Office, based in The Netherlands**

I am Mr Arjan Bezemer, General Manager of Daikin Refrigeration Office, based in Rotterdam, The Netherlands. Our team in Rotterdam provides the contact point for all Reefer Sales, Service and Engineering for Daikin's customers in Europe, Middle East and Africa. Looking back, I clearly remember when Daikin secured the order from Royal Arctic in 2002 followed by an order for 14,000 reefer units from P&O Nedlloyd in 2003. That was the start of huge business expansion and it confirmed that the LXE machinery was the right equipment for the market. Now the LXE is known as the reliable 'work-horse' of the industry. In the future I expect to see a fast changing market where Daikin, with its in-house expertise and development, together with the support of Daikin's "Technology and Innovation Center", is able to provide custom made solutions for our customers and end-users, for the future to come.



**Ronald van Anandel**

**Regional Service Manager EMEA**

I am Mr Ronald van Anandel, Regional Service Manager EMEA and I started working for Daikin in December 2007. Since I started working in the reefer business, I've always been interested in what happens from the moment the reefers are loaded on the vessel to the point when they arrive at the next port. In 2009 Daikin gave me the opportunity to join a three-week vessel trip from South America to Rotterdam, to experience and undertake live monitoring on a power consumption (DTMS) trial. This allowed me to understand how the reefers react during transport and to understand how the reefers keep running, often without the correct part or with no part yet the team was able to fix them! I called them MacGyvers! Nowadays I still cite this experience during training sessions.



**Matsui Kazuyasu**

**Group Leader Senior Engineer**

I am Mr Matsui Kazuyasu and I'm the Group Leader Senior Engineer, responsible for Reefer unit development. I joined the team in 2009. For me Daikin is now at a very exciting time in its development: we are now in a position where both shippers and shipping lines understand the benefits of Daikin Active CA and believe in the technology and reliability. I believe that we can grow further with CA technology as our core offering to further attract the market and secure our growth. It is not easy to maintain high quality in a very tough usage environment on board ships. We have made quality issues our top priority from the boardroom to the engineering team and have been striving to improve quality as an overall team.



**Robert Ferreyra**

**Sales and Marketing Manager for Latin America and Miami**

I am Mr Robert Ferreyra, the Sales and Marketing Manager for Latin America and the Miami area and have been at Daikin Reefer since September 2007. Our people are our most important asset here at Daikin: from the top management to administration personnel, everybody in our Reefer team works with total professionalism and with complete focus on customer satisfaction. Our people really make the difference.



**Junya Matsuzaki**

**President of Daikin Refrigeration Suzhou Co Ltd (DRS).**

I am Mr Junya Matsuzaki. President of Daikin Refrigeration Suzhou Co Ltd (DRS). I have been at Daikin Reefer for 8 years. During my time here, I am most proud of achieving over 20 000 units in production per year at our plant since 2010. I believe that our advanced Active CA technology clearly sets us apart from our competitors.



**Misayo Ono**

**Assistant Manager, Sales Department, Reefer Container Division**

I am Ms. Misayo Ono and I'm in charge of domestic sales and sales administration in Japan. I joined Daikin Reefer in 2006 and have worked here for 12 years. My most memorable moment from my time at Daikin was when we entered the leasing market for the first time. Also important has been the expansion of our service network: nowadays we have around 500 repair points across the globe. For me, our Daikin brand represents absolute reliability, supported by the world's most advanced in-house technology.



**Katshuhiro Tetsuya**

**Director, Reefer Container Division**

I am Mr Katsuhiko Tetsuya, Director Reefer Container Division. I have been working at Daikin Reefer since 2009. At the start times were very tough following the global economic crisis. Since then, our business has had high and low times but I feel we are now in very favourable market conditions and that this is now Daikin's time. We set ourselves apart from our competitors by being a manufacturer, not just an assembler of products. My wish for Daikin is that we become number one in the world in the markets we serve.

# Refrigerant update

## R513A to be added to Daikin Container Refrigeration System's line-up

**D**aikin is constantly mindful of the environmental and climate change impact of our products. Our team is committed to delivering cost-effective solutions to meet these challenges.

We have a long history of continuously and regularly improving the energy efficiency of our container refrigeration systems so that they have a lower environmental impact.

Currently, growing awareness of the impact of climate change has introduced new regulatory policies to lower the direct global warming potential (GWP) impact of refrigerant gas.

In response to this market trend, Daikin will be introducing R513A as an option to our line-up of container refrigeration systems from the second half of 2019. In addition, a modification kit will also be introduced, so that R134a as currently charged in container refrigeration systems in the field can be replaced with R513A whenever needed.

R513A is a blend refrigerant of hydrofluoroolefin (HFO) and hydrofluorocarbons (HFC) with a GWP of approximately less than half of R134a. In addition, R513A has the following benefits:

- Flammability class A1 – No flame propagation and lower toxicity level
- Similar characteristics with R134a, minimizing necessary modifications
- Being prepared for use in transport refrigeration systems

At Daikin we assess four key criteria when making the best balanced refrigerant choice for container refrigeration systems: safety, environmental impact, energy efficiency and cost-effectiveness.

Achieving a solution that satisfies all of the four key criteria throughout the product lifetime requires challenging innovation and deep evaluation. Daikin remains focused on developing such long-term solutions to continuously reduce the environmental and climate change impact of our products with our four key criteria.

	Cold Chain	Daikin & Zanotti Products	Alternative Refrigerants															
<b>Industrial Refrigeration</b>	 Producing site Food processing		<b>Assessment with 4 core factors by each application</b> Safety Environmental Energy efficiency Cost <table border="1"> <thead> <tr> <th>Current</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>R-404A</td> <td rowspan="2">CO<sub>2</sub> &amp; Ammonia expand line up (natural)</td> </tr> <tr> <td>R-410A</td> </tr> <tr> <td>R-134a</td> <td rowspan="3">Lower GWP HFCs(non flammable) R-407H / 448A / 449A / 463A etc</td> </tr> <tr> <td>R-448A</td> </tr> <tr> <td>R-449A</td> </tr> <tr> <td>CO<sub>2</sub></td> <td>R-32, HFOs etc (Lower flammability) <b>Now under Risk Assessment</b></td> </tr> <tr> <td>Ammonia</td> <td rowspan="3">R-290*, R-600a* expand line up (Higher flammability)</td> </tr> <tr> <td>Propane</td> </tr> <tr> <td>Isobutane</td> </tr> </tbody> </table> <small>* For small refrigerant charge</small>	Current	Direction	R-404A	CO <sub>2</sub> & Ammonia expand line up (natural)	R-410A	R-134a	Lower GWP HFCs(non flammable) R-407H / 448A / 449A / 463A etc	R-448A	R-449A	CO <sub>2</sub>	R-32, HFOs etc (Lower flammability) <b>Now under Risk Assessment</b>	Ammonia	R-290*, R-600a* expand line up (Higher flammability)	Propane	Isobutane
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<b>Transport Refrigeration</b>	 Maritime Transport Land Transport		<b>Marine Container</b> R-134a → R-513 → R-1234yf / R-32 <b>Now under Risk Assessment</b> <b>Truck &amp; Trailer</b> R-404A → R-452A → Low GWP Refrigerant															

Daikin Refrigerant Assessment

# Event update

## Daikin team returns to Intermodal South America in Sao Paulo, Brazil



**I**ntermodal South America remains a key forum for executives from the logistics, cargo transport and intermodal supply chain markets. The exhibition is always an important date in the Daikin calendar and the team touched down in Sao Paulo for this year's event from March 13th to 15th.

The event team welcomed around 200 visitors to the Daikin booth where discussions were held with both existing and prospective customers on Daikin's solutions portfolio as well as its extensive global parts and service network. The team also took the opportunity to catch up with industry colleagues to share views on market and industry news.



The Daikin booth was busy throughout Intermodal South America



The Daikin team also held a birthday celebration reception during the event

# Event update

## World reefer container trade trends discussed at Cool Logistics Global 2018

**A** Daikin team attended the annual Cool Logistics Global congress which took place this year in Antwerp during October. This was the 10th edition of the specialist forum that brings together senior executives from shippers, ocean carriers, logistics companies, infrastructure, equipment, technology and other service providers focused on world trade in refrigerated cargoes.



**Anne-Sophie Zerlang Karlsen, Head of Global Reefer Management for Maersk Line**

Digitalisation and disruptive technologies were major themes, looking at the twin roles of the Internet of Things (IoT) and blockchain to make the cold chain 'smart', providing real-time transparency, trusted transactions and predictive analytics that can drive down operational costs and improve value to retailers and end consumers. Daikin are focussed on ensuring that customers get access to the

unit data they need when they need it. The importance of energy and environmental efficiency of reefer containers were also highlighted, looking at the need to measure and minimise power consumption at sea and on land. It fits well with Daikin's wide-spread use of DC inverter systems for

refrigeration, in both A/C and reefer containers. Delegates also heard about the massive future opportunities in China, where booming food e-commerce and a growing middle class concerned about food safety and quality are setting off a cold chain explosion. Chinese cold chain logistics will create huge demand for new cold storage facilities and refrigerated transport as China imports and consumes many more perishable goods.



**Delegates at Cool Logistics Global in Antwerp**

it un-economical to adapt older conventional reefer ships to meet the new environmental fuel standard. She said bananas, citrus and some fish trades would move to containers as a result. Coupled with the rising importance of Asia as a global source of demand, longer ocean voyages from key production areas like South America means more reefer boxes will be needed.

Seabury Consultants confirmed the strong growth in global refrigerated trade, which is rising at over 6% annually. Anne-Sophie Zerlang Karlsen, Head of Global Reefer Management for Maersk Line, added to the positive outlook for reefer containers, referring to the International Maritime Organization (IMO) forecast, that the upcoming 0.5% sulphur fuel cap in 2020 will make

## Daikin team to attend Intermodal Europe, Rotterdam, from 6 – 8 November

**T**he Daikin team will be attending Intermodal Europe and welcomes visits from customers and industry colleagues to its booth C40.

This exhibition and conference is a key event in Daikin's calendar and the team finds this a valuable industry forum for

all companies associated with the container and intermodal industries. It is easy to register as a visitor and we look forward to seeing you there.

For more information and to register as a visitor, please visit <https://www.intermodal-events.com/en/Registration.html>



We are tweeting daily about Daikin's activities and market news. Be sure to check us out at [twitter.com/DaikinReefer](https://twitter.com/DaikinReefer)



Send us a tweet! We would love to hear from you! #DaikinReeferTeam



Be sure to check us out at [www.linkedin.com/company/daikin-industries](https://www.linkedin.com/company/daikin-industries)



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Check out our new Daikin Reefer Youtube channel!

