

Metso:Outotec

Planet Positive

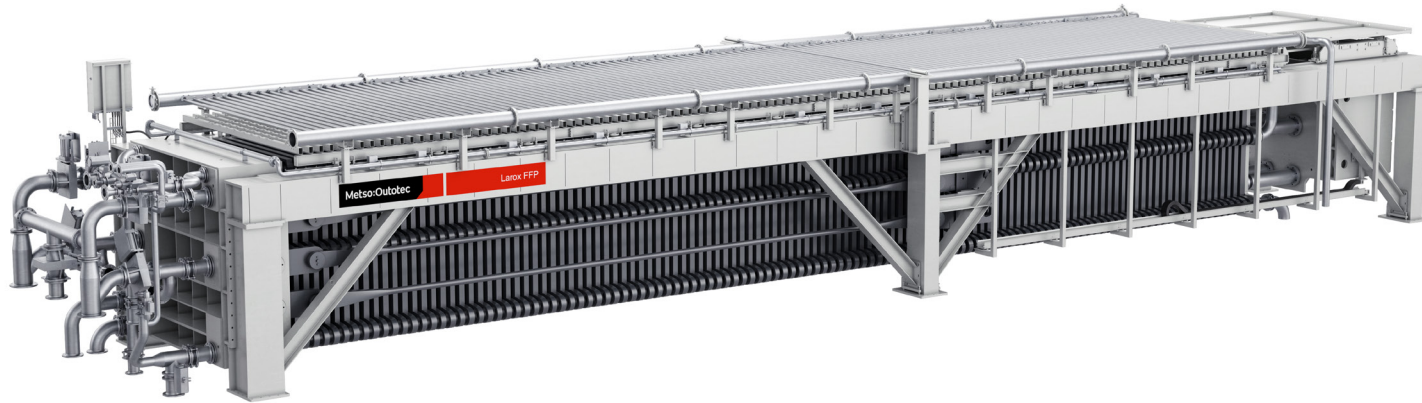
Mining Filtration

Leading
sustainable
dewatering
innovations



Leading sustainable dewatering innovations

With nearly a century of experience in supplying filtration equipment and services, Metso Outotec has the most comprehensive and sustainable filtration portfolio on the market. We produce smart and sustainable dewatering solutions for various mining applications in concentrates, tailings and bulk filtration. Metso Outotec is always evolving to solve the toughest challenges that the customers may face.



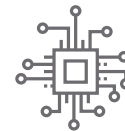
Strong legacy

Metso Outotec has nearly a century of experience in supplying filtration equipment and services



Unrivaled diversity

The most comprehensive and sustainable portfolio on the market coupled with a comprehensive Services offering



Smart dewatering

Smart and advanced automation features from control systems to automatic process adjustments for optimized performance and remote-control options



Leading process know-how

Metso Outotec has a unique Dewatering Technology Center (DTC) in Lappeenranta, Finland where R&D and testing is done with close cooperation on research with universities



Planet Positive

Sustainability is one of Metso Outotec's key strategic priorities, we are committed to limiting global warming to 1.5 °C. The filtration solutions are a part of the recently launched Planet Positive offering, since they are designed to improve water-efficiency, lower emissions and amount of energy consumed.

Planet Positive is our all-encompassing approach to sustainability, which covers the environmental, social and financial aspects. Our Planet Positive offering has a central role in our sustainability agenda and 1.5 °C journey as it represents the key means of improving the resource efficiency of our customers' operations.

Our long-term goal is to provide customers with products and services that are even more sustainable. We will continuously develop our filter offering, with a focus on energy efficiency, reducing emissions, water efficiency, circular solutions and safety.

Pressure filtration Larox® PF filter

Proven, flexible and reliable Larox PF filter provides advanced filtration performance for a wide range of applications. This pressure filter has a fully automatic, horizontally oriented recessed plate pack with diaphragms. The continuous filter cloth ensures thorough cloth washing and guaranteed cake discharge from each chamber every cycle.

Benefits

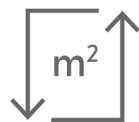
- Adapts to varying process conditions
- Short cycle time
- Reduces wash liquid consumption
- Ensures the highest specific filtration capacity
- Designed for flexible processes
- Constant short technical time, independent of filter size



Key features:



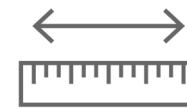
1 - 28 chambers
installed



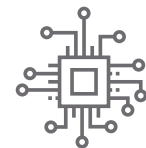
1.6 m² - 168 m²
filtration area



Up to 16 bars
operating pressure



33, 45, 60 and 75 mm
chamber depth



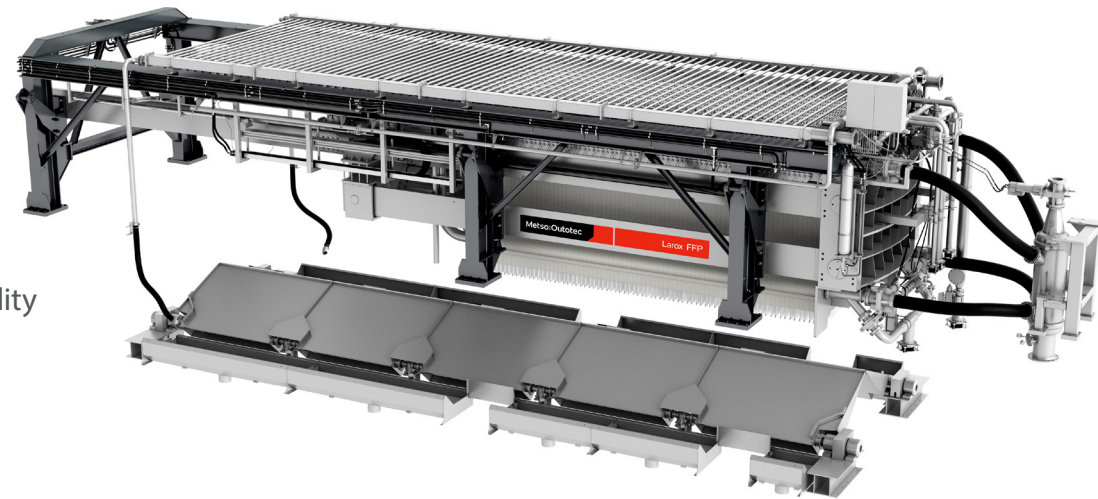
Enhanced
automation system

Pressure filtration Larox[®] FFP

Reliable and optimized Larox FFP filter provides high volume processing for concentrates, tailings and bulk applications. The integrated perimeter protection satisfies occupational health and safety requirements, while the modular design reduces installation costs and simplifies maintenance. FFP filters are available with automatic control of both mechanical operation and process optimization. The filter's programmable logic controller controls all operations.

Benefits

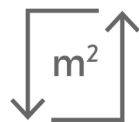
- Ensures high availability and capacity
- Simple installation, operation, and maintenance
- Flexible and fully automatic operation with data logging capability
- Adjusts automatically to process changes
- Possibility to operate remotely for improved support



Key features:



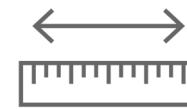
3 - 120 chambers
installed



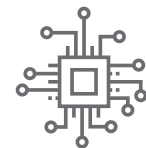
Up to 1980 m²
filtration area



Up to 16 bars
operating pressure



40, 45, 50, and 60 mm
chamber depth



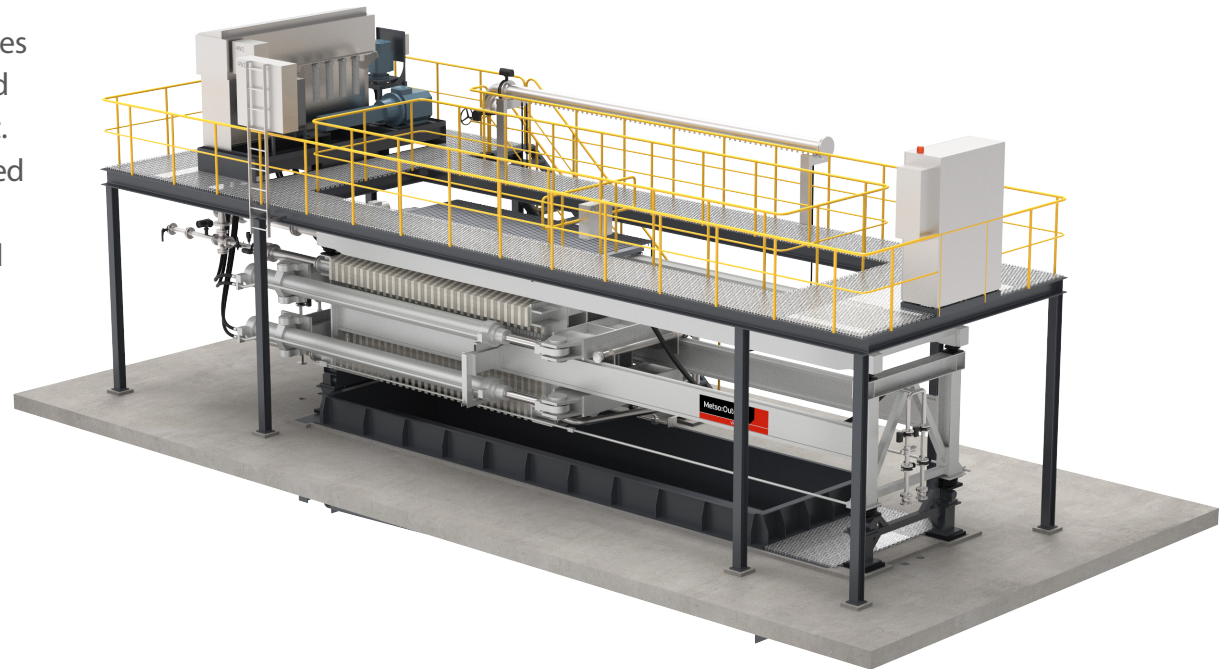
Advanced
control system

Pressure filtration VPA filter

Metso Outotec VPA filter is a reliable and optimized dewatering solution with high volume processing for difficult tailings applications and concentrate filtration. The membrane technology eliminates cracks in the cakes and compensates for the shrinking, resulting in reduced compressed air consumption and total dewatering cost. The VPA filter load cell weighing system, which is integrated to the control system provides accurate production information and can be used to optimize the filtration and drying steps in the filter cycle for optimum performance.

Benefits:

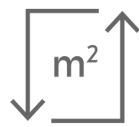
- Ensures high availability and capacity
- Easy to change cloths
- Low maintenance, dewatering and operation cost
- Environmentally friendly
- Controlled by fully automated system



Key features:



Up to 66
chambers installed



Up to 515 m²
filtration area



Up to 10 bars
operating pressure



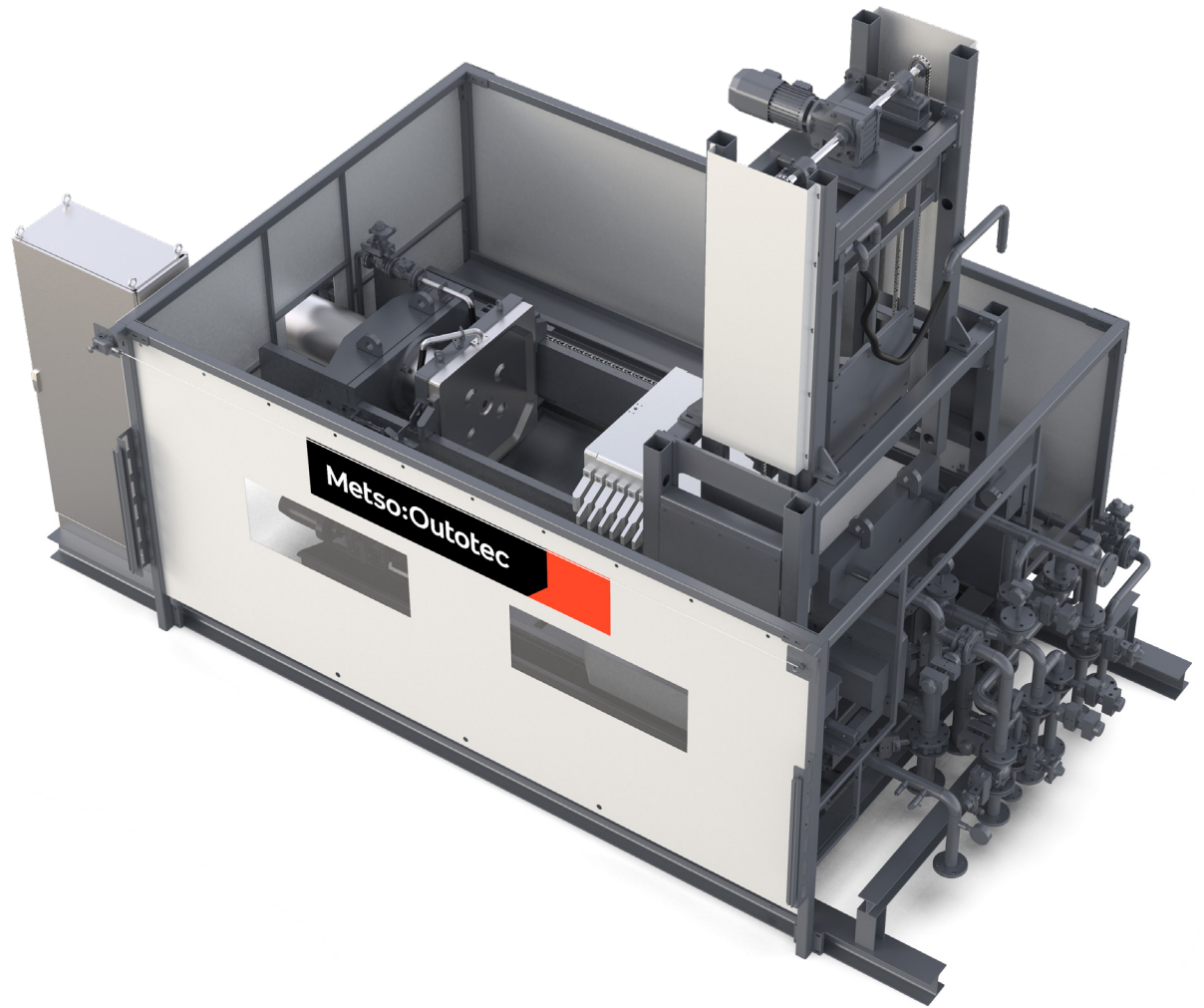
30, 40 and 50 mm
chamber depth



Few moving parts

Pressure filtration FPS filter

Metso Outotec FPS filter is a standard filter press solution for safe and reliable operation. It offers efficient solid-liquid separation in a broad range of standard applications such as filtration in bulk mining, metallurgical refineries and industrial minerals. The FPS filter press is available with different safety device options, and features Siemens S7 series control and an HMI system for easy, stable operation.



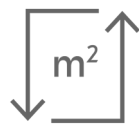
Benefits:

- Ensures high availability
- Wide variety of applications
- Standard design that reduces CAPEX
- Short lead time

Key features:



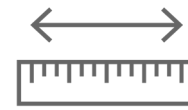
Up to 130
chambers installed



Up to 850 m²
filtration area



Up to 16 bars
operating pressure



30, 35 and 40 mm
chamber depth



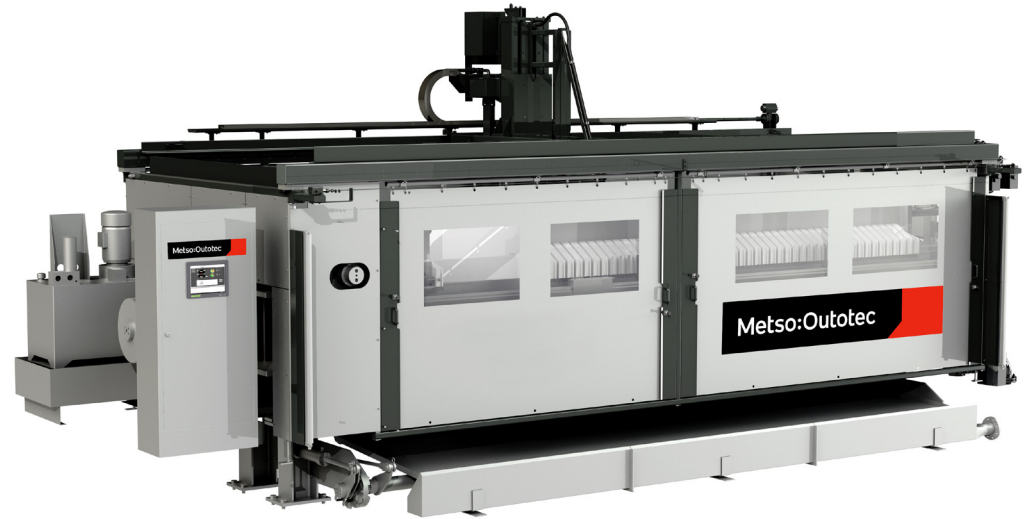
Shorter technical time
than traditional filter press

Pressure filtration FP filter

Metso Outotec FP filter is a reliable dewatering solution for delivering and exceeding process performance targets. The filter presses are available with semi or fully automatic control in filtration areas of up to 1200 m². They are designed to the latest Eurocode standards and ensure operator safety with perimeter protection and safety interlocks.

Benefits

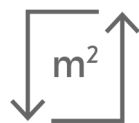
- Reduces cycle times through membrane squeezing
- Produced homogeneous filter cake for increased product quality
- Low wash liquid and cleaning time
- Low energy consumption during cake drying
- Customizable and adaptable to individual conditions
- Compliant with the most demanding standards



Key features:



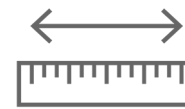
Up to 174
chambers installed



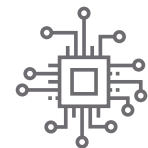
Up to 1,200 m²
filtration area



Up to 16 bars
operating pressure



25, 30, 40, 50, and 60 mm
chamber depth



Shorter technical time
than traditional filter press

Vacuum filtration CC filter

Get high availability with CC filters – a throughput solution boosting energy efficiency for difficult mining applications. Latest technology Hybrid CC filter plates are designed for harsh mining conditions. With high availability and less power consumption our straightforward but effective ceramic CC filter technology helps achieve greater productivity and the best filtration performance.

Benefits:

- Prevents air penetrating the wet filter plate
- Requires very low energy consumption
- Achieves a high vacuum level
- High availability
- Low operating costs



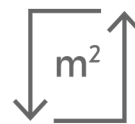
Key features:



3.8 m
disc diameter



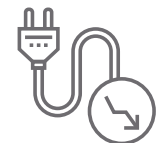
Up to 20 discs



144 & 240 m²
filtration area



Near absolute vacuum
operating pressure



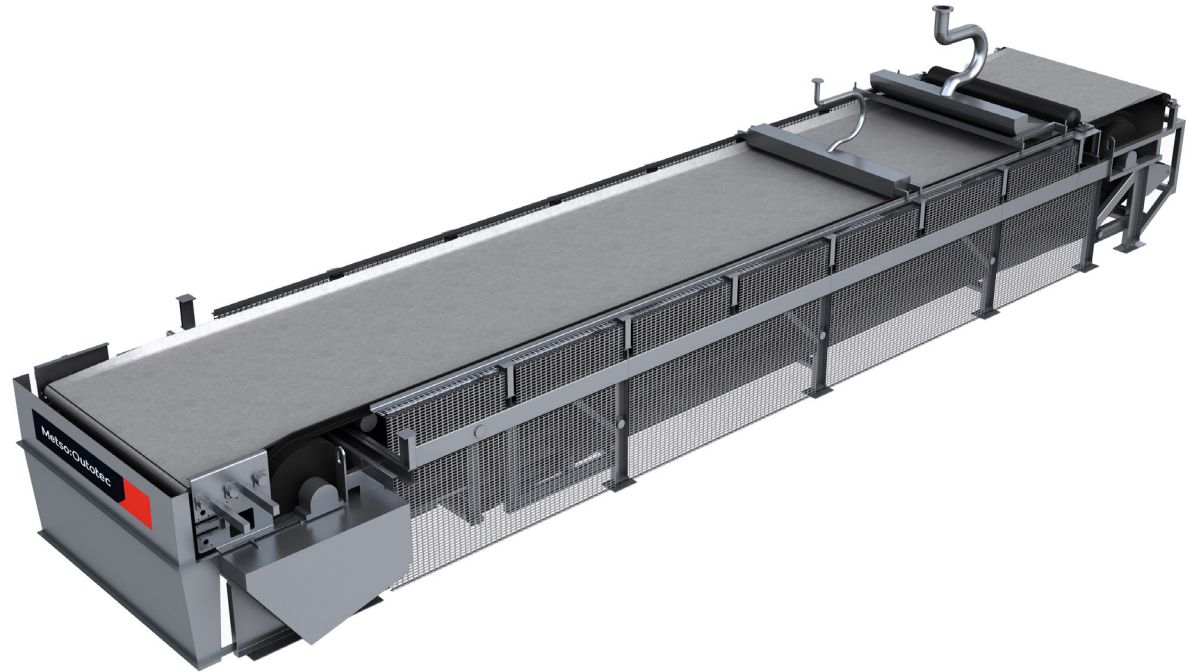
Low energy
consumption filter

Vacuum filtration RB filter

Metso Outotec RB filter with its modular structure, robust and high-capacity design ensures superior filtration performance in mining and tailings applications. RB filters are tough enough for even the highest capacities, while still bringing superior performance in separation, washing, and cake dewatering. Horizontal belt filters offer a wide variety of benefits, including good cake washing, continuous and visible processing, fully automatic and flexible operation, and relatively high speeds.

Benefits

- Easy installation, operation, and maintenance
- Modular structural design
- Flexible and fully automated operation
- Adjusts automatically for process changes
- High availability and consistent performance



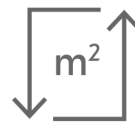
Key features:



3 & 4.25 m
filtration width



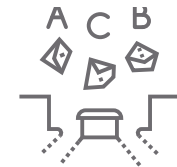
Up to 40 m
filtration length



Up to 170 m²
filtration area



Advanced cake
washing options



Large variety
of applications

Vacuum filtration SC filter

Ensures high productivity, cost-efficiency and reliability. The SC filter is a proven solution for dewatering iron, mineral concentrates, tailings, and industrial minerals. SC filters are designed for simple maintenance, their robust structure makes the filters suitable for even the harshest environments.

Benefits:

- Simplifies maintenance and minimizes downtime
- Reduces vacuum losses from large flow areas
- High vacuum and filtration rates
- Discharges cake efficiently and continuously
- High tonnage and low moisture rates



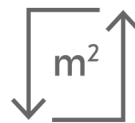
Key features:



3.8 m
disc diameter



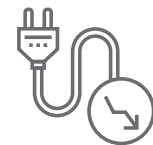
Up to 20 discs



Up to 240 m²
filtration area



Vacuum
operation



Standardized paste
backfill installation

Customer case

VPA filters improved the efficiency of TISCO's Jianshan Filtration Plant



Challenges

- Before 2013, the plant was equipped with three sets of US-made pressure filters and four sets of domestic filters, which, in terms of energy consumption and production efficiency, were not enough.
- The plant had experienced unplanned shutdowns frequently. Although they had been attempting to improve the management level, no proper improvement in productivity was seen.

Solution

- Four sets of Metso VPA2050-50 pressure filters were integrated into the upgrade project implemented by TISCO in 2013

Result

- Processing capacity increased from 3,250,000 t/a to 3,880,000 t/a
- Filter cake moisture reduced from 9.5%-10% to 9.1%-9.3%.
- Cycle time dropped by 18%
- Efficiency improved by over 22%.
- Energy savings increased by approximately 40%
- The annual saving can reach up to 5,400,000 kWh, which results in savings of approximately EUR 750,000.



Get the most out of your filters Metso Outotec Services

At Metso Outotec we strive to deliver the best possible quality, availability, performance, and financial solutions for our beneficiation and dewatering customers. We are dedicated to the long-term journey throughout the equipment life cycle, creating win-win relationships for all stakeholders.

By combining the quality products and expertise, we possess the unique ability to partner with our end-users, provide services, reliability, innovation and results safely with sustainability at the core of all we do.



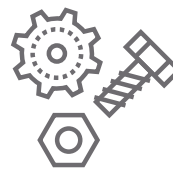
Spare and wear parts

Rely on OEM experts because not all parts are created equal. Spare and wear parts built to perform.



Maintenance, shutdowns and repairs

Trust those who know the equipment best to ensure that your production goals are met.



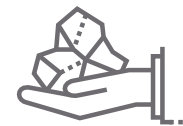
Modernizations, upgrades and retrofits

Whether you aim to restore equipment to its original condition or upgrade it for increase performance, explore your options



Process optimization and connected services

By understanding your business needs, we improve performance using technology and expertise



Lifecycle services

Tailored service packages delivering performance outcomes. Your goals are our goals!



