Smart, Safe and Smooth Future

ANNUAL REPORT 2020

TELESTE

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Consistent innovation work and collaboration with industry organisations has paved the way for high rate data transfer solutions for future public transport communications.

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Finland's largest cable operator and the leading pay TV provider DNA evaluated the impact of Teleste's software-based ingress control in identifying service issues in their network in Southern Finland. The aim was to improve the quality of broadband services to subscribers.

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The Littoinen factory has been leading the way in highly efficient production and manufacturing quality. We have further strengthened our competitive advantages in Littoinen production along with digitalisation based innovative intelligent picking system.

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SAFE AND ENJOYABLE JOURNEY FOR PASSENGERS ON THE DOCKLANDS LIGHT RAILWAY

Teleste was given an exciting opportunity to work on improving the travel experience of passengers on one of the largest automated transport networks in the world when an international vehicle manufacturer, CAF, selected our on-board systems for 43 new driverless light rail metro trains aimed at adding capacity in the network from 2023 onwards.

Key Figures

Teleste is an international technology group that offers an integrated product and service portfolio that makes it possible to build and run a better networked society. Our solutions bring television and broadband services to you, secure safety in public places and guide the use of public transport.

Until the end of 2020, our business was divided into two divisions, which are Video and Broadband Solutions and Network Services.

Teleste revised its strategy in May 2020. According to revised strategy Teleste divested its cable network field service operations in Germany in November. The services business of the Germany-based Cableway companies was classified as an asset held for sale pursuant to IFRS, and Teleste reported the business as a discontinued operation in accordance with the standard.

The income statement figures presented in this report only include the continuing operations, except where otherwise noted.

Net sales, M€

145.0

(2019; 165.3)

Adjusted operating result, M€

5.1

(2019; 8.8)

Earnings per share, €

0.16

(2019; 0.00)

Orders received, M€

148.8

(2019; 167.5)

Dividend, €

0.12*

(2019; 0.10)

**board proposal*

CEO'S REVIEW

From unexpected challenges to sustainable growth

Despite the negative impacts of the coronavirus pandemic, 2020 saw a great deal of positive development. We proceeded with our key product development projects and the development of our operations in a determined manner without making any compromises. On the whole, by flexibly adjusting to the exceptional circumstances, we got through 2020 well. Continuous development efforts will make us more competitive as markets start to pick up.

It is impossible to have an overview of 2020 without putting it in the framework of the coronavirus pandemic. The virus and the prevention measures it necessitated created considerable and unpredictable challenges globally, which also had major impacts on business conditions. For Teleste, the impacts of the pandemic started to be seen concretely in March when various countries imposed measures to combat the virus. In response to these measures, operators restricted or suspended their broadband network construction, while certain customers in passenger information solutions were forced to temporarily close down their factories and delay projects. However, the effects of the pandemic on Teleste's supply chain and component availability remained limited and the virus or the related prevention measures did not have a decisive impact on our delivery capacity.

The pandemic also slowed down the ongoing technological transformation of broadband networks and the breakthrough of distributed access architecture, and the number of orders received as well as our net sales and adjusted operating result decreased. However, the order backlog and cash flow from operations continued to grow. To ensure our growth development, delivery capacity and liquidity, we took adjustment measures leading to, among other things, temporary layoffs realised through reduced working hours. The adjustment measures generated necessary cost savings but we did not reach the same profitability as in the comparison period.

THE NEW STRATEGY GUIDES PROFITABLE GROWTH

In May, we published a revised strategy, according to which we will increasingly focus on technology business operations and the services of higher added value supporting them. Guided by the new strategy, we are able to respond more efficiently to needs arising from global trends and strengthen our market position.

Concrete manifestations of the new strategic direction during 2020 included, for instance, divesting the field service operations in Germany and selling the Cableway companies to Circet Deutschland GmbH. The transaction, completed in November, improved Teleste's financial position and capacity to invest in the strategic growth areas of the technology and product business.

DETERMINED PROGRESS TOWARDS MORE ACTIVE MARKETS

The coronavirus pandemic posed considerable challenges to the daily functioning of society and public transport operators, for instance. Despite this, the order intake in passenger information solutions remained stable and we strengthened our market share. During the year, we signed numerous significant delivery agreements with European rail car manufacturers and traffic operators. With these agreements, Teleste's information and security systems will improve the flow and safety of traffic in the key public transport routes globally. Also the innovative S-AWARE® situational awareness system that we delivered to Helsinki City Transport was deployed during the year. It uses real-time data from several sub-systems and helps make public transport smoother and safer.

The restrictions introduced around the world to mitigate the pandemic led to a significant increase in remote work and, as a result, household data traffic. Consequently, operators focused on securing the functionality of existing networks instead of making new investments, and the transition to distributed access architecture was also delayed. However, our view is that the technological transformation is coming and we expect it to increase the demand for our access network products in the next few years. We have carried out continuous development work with our customers, both in laboratory conditions and

in field tests, and we are ready for the time when investments in distributed access architecture begin.

During the year, we continued our determined work to expand our business operations into the North American market. With the deployment of distributed access architecture, our chances of succeeding in North America will be good. We have positive expectations regarding Teleste's success in the market. Naturally, the difficult situation of the pandemic in the United States delays new technology investments.

In our Network Services business area, orders and net sales decreased in continuing operations but, thanks to the focus on higher-added-value planning services and cost adjustments, the operating result grew. England, Switzerland, Poland, Belgium and Finland are the key markets for our operations, where we continued the determined development of the services business.

RECOGNISED RESPONSIBILITY

Teleste's goal is to create added value for society and people: with our products and services, we build and maintain the central, critical functions of society and make everyday life smart, safe and smooth. During the year characterised by the coronavirus pandemic, all of these targets based on our mission have become even more significant.

Teleste's goal is to create added value for society and people: with our products and services, we build and maintain the central, critical functions of society and make everyday life smart, safe and smooth.

We also received important recognition for our technological achievements and operating practices throughout the year: in its Diamond Technology Reviews, the 2020 Broadband Technology Report recognised Teleste's intelligent ACE8 node as among the best in the industry, and Teleste received a Silver rating in recognition of Corporate Social Responsibility (CSR) achievements from EcoVadis, one of the world's most trusted provider of business sustainability ratings.

Although the year was challenging, we made no compromises in our future-oriented development efforts. Thanks to continuous development, we are a reliable partner with a strong foundation for continuing the development of its offering in a sustainable and environmentally friendly manner. In everyday life, we have invested in virtual interaction and been capable of acting in the changing communications environment confidentially and understanding our customers' needs.

Due to the coronavirus situation, we also had to take measures that have put our employees' ability to adjust to the test. Our competent, dedicated and enthusiastic personnel have done an outstanding job and coped with the sometimes rapid changes in everyday life excellently.

AIMING BACK TO GROWTH TRACK

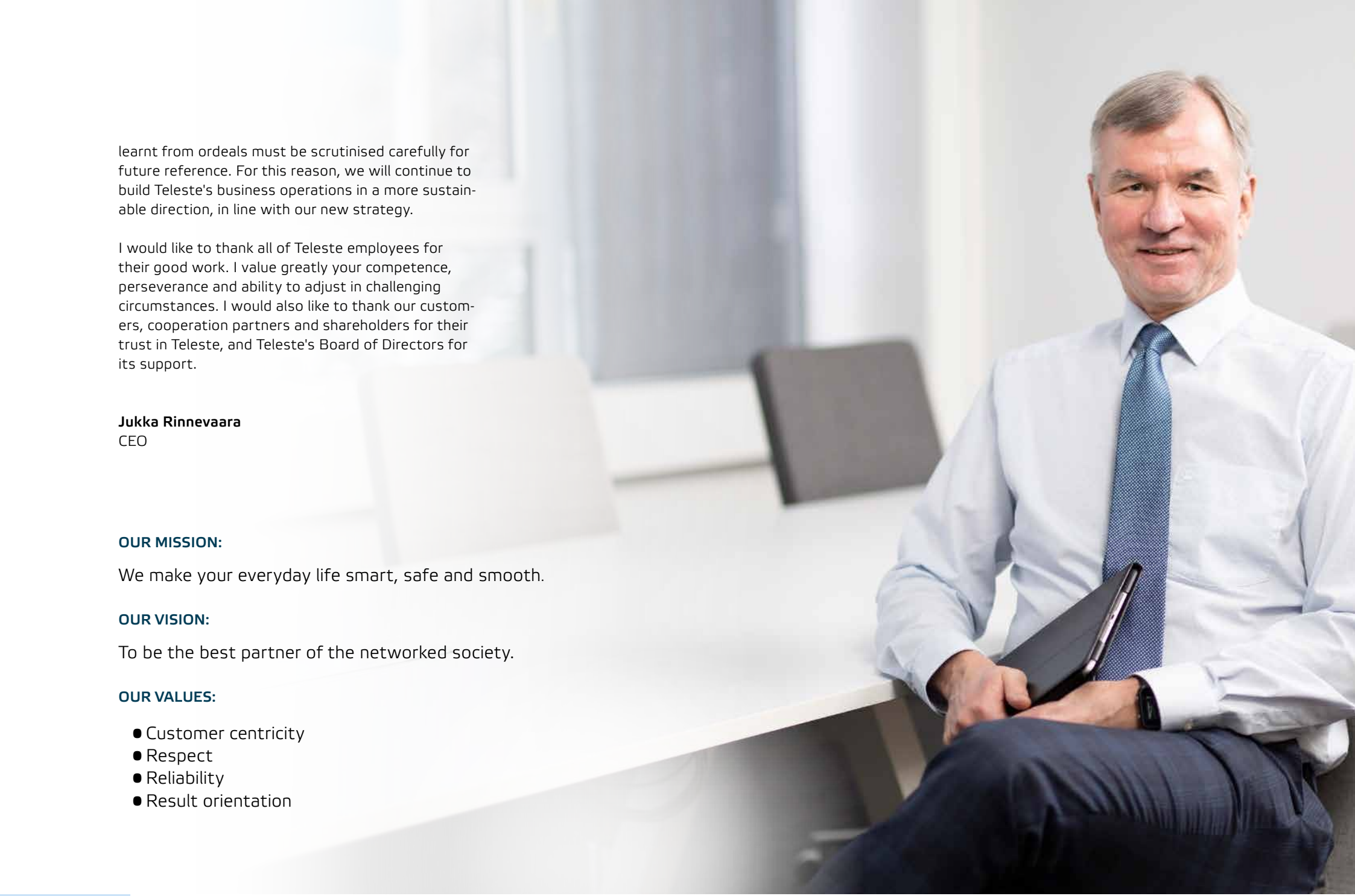
Despite the long shadow of the pandemic, we believe 2021 will be brighter than the past year. When the extensive coronavirus vaccination programmes begin, business conditions will improve and we can expect to return to the sustainable growth track. It is expected that operators will launch distributed access architecture deployment projects during the second half of the year and the growth prospects in passenger information and video security solutions are also promising.

Nevertheless, it is self-evident that we will live within the framework set by the coronavirus pandemic at least for the first half of 2021, and forecasts indicate that it is possible that similar exceptional circumstances will arise in the future, too. The lessons

learnt from ordeals must be scrutinised carefully for future reference. For this reason, we will continue to build Teleste's business operations in a more sustainable direction, in line with our new strategy.

I would like to thank all of Teleste employees for their good work. I value greatly your competence, perseverance and ability to adjust in challenging circumstances. I would also like to thank our customers, cooperation partners and shareholders for their trust in Teleste, and Teleste's Board of Directors for its support.

Jukka Rinnevaara
CEO



OUR MISSION:

We make your everyday life smart, safe and smooth.

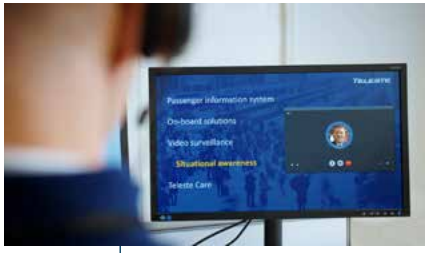
OUR VISION:

To be the best partner of the networked society.

OUR VALUES:

- Customer centricity
- Respect
- Reliability
- Result orientation

Teleste’s year 2020



TELESTIANS, together with the rest of the world, started working remotely due to the COVID-19 pandemic, exploding network capacity demand.

84% **MYPULSE SURVEY** carried out to measure employee satisfaction at Teleste achieved an 84% response rate.

THE OPENING OF TELESTE LAB, a practical training environment for students at Turku Vocational Institute in Turku, Finland.

Q1

Q2

THE FIRST-EVER #TelesteLIVE virtual webinar gathered more than 500 participants interested in the future of the cable industry.

WE RECEIVED EcoVadis Silver rating for Corporate Social Responsibility.

OUR INVESTOR PAGES achieved a third place in the category ‘Small Cap’ in the Best Investor Pages 2020 competition arranged by the Finnish Foundation for Share Promotion and the Finnish Society of Financial Analysts.

"

This has been a truly exceptional year, which has required continuous efforts from all of us. It remains important to maintain a good team spirit and support our colleagues through these challenging times. We have learnt many new ways to operate virtually, and some of those will become permanent practices as we move into the new normal."

***Jukka Rinnevaara**, CEO*

OUR ACE8 node was recognized in the 2020 Diamond TechnologyReviews.

CABLEWAY

THE DIVESTMENT of the Teleste's Service business in Germany to Circet Deutschland GmbH was completed.

Q3

TELESTE LEADERSHIP principles and Teleste Leader program were launched.

"

We have considered that by investing in leadership, we can support all of the areas of our people strategy: processes, employee experience and development of leadership."

***Tuomas Vanne**, SVP, People and Competence*

Q4

NEW INTELLIGENT PICKING SYSTEM was taken into use at our Littoinen factory in Finland.

COMPANY-WIDE EMPLOYEE EXPERIENCE SURVEY revealed that 77.4% of Telestians are happy to come to work every day.

ANNUAL REPORT 2020

Year 2020 and the way forward

Teleste's strategy

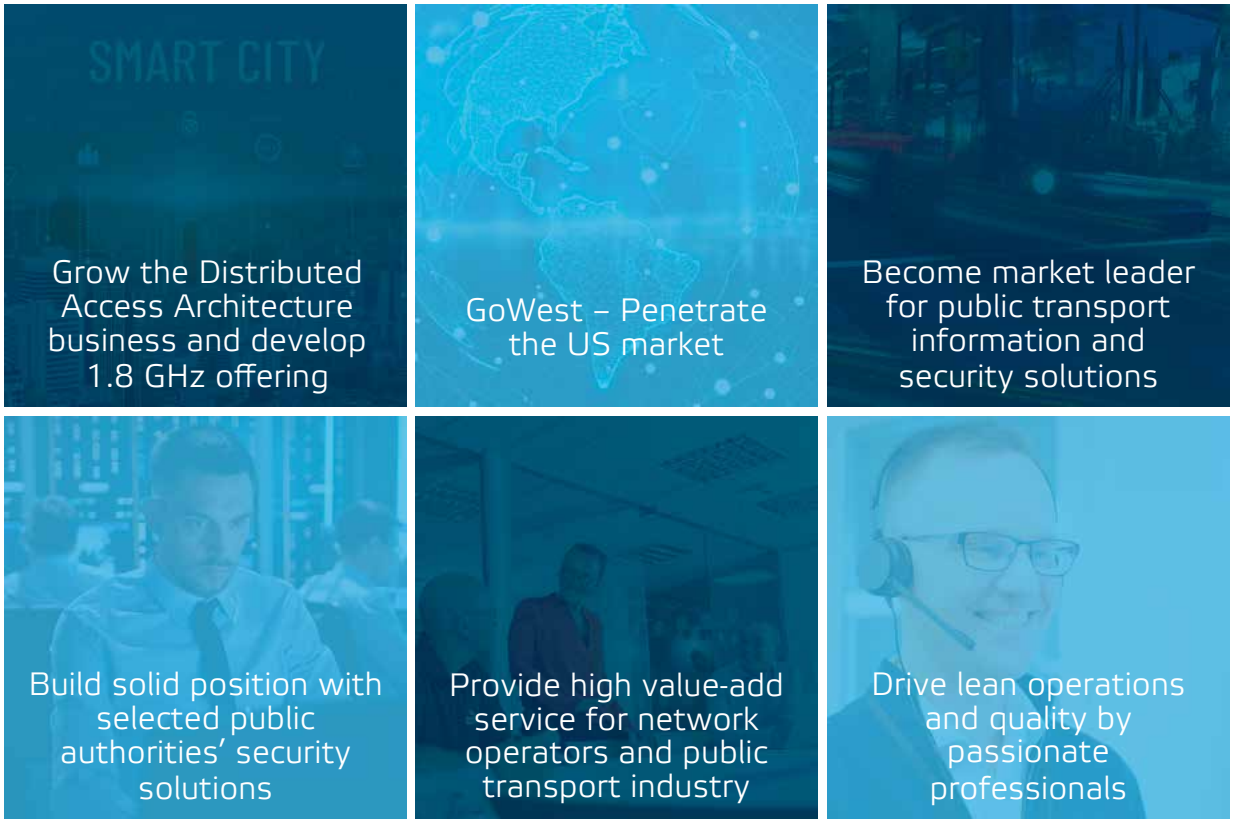
KEY DRIVERS BEHIND OUR STRATEGY:

- **Climate change**
  The immediate need to slow down the climate change drives everyone to find ways to reduce CO_2 emissions. At Teleste our solutions drive the use of the public transportation and high quality, intelligent communication networks that play important role in achieving the goal.

- **Globalization and urbanisation**
  Urbanisation drives the demand of public transportation and highlights the need for public security. Utilising smart technologies for data communication networks and real-time sharing of information, our solutions enable smooth and safe living environments for people, while creating grounds for the networked society on a global scale.

- **Digitalization and technological development**
  Digitalisation and technological development are key enablers for new, increasingly personalised, services over the internet, and phenomena such as IoT requiring high level of connectivity. Our technologies ensure multi-gigabit connectivity and networks evolving in pace with the demands for more capacity and more reliable, high-quality services.

OUR STRATEGIC CORNER STONES:



Year 2020 and the way forward

Our work is meaningful. Teleste's products and services are related to socially important and even critical functions, such as high-speed broadband connections, public transport solutions and security. Safeguarding the incident-free operation of these infrastructure services is particularly important during crises. The relevance and responsibility of our work are important to us and this is one of our strengths. Our operations and solutions can be best described as "Making your everyday life smart, safe and smooth".

VIDEO AND BROADBAND SOLUTIONS

Video and Broadband Solutions focuses on access network products as well as video security and information solutions.

Orders received decreased year-on-year by 10.8% to EUR 128.0 (143.5) million. Orders received decreased both in access network products and in video security and information solutions. The order backlog increased by 5.3% compared to the end of the reference period and totalled EUR 77.1 (73.2) million. Net sales decreased by 12.2% to EUR 124.1 (141.4) million. Net sales decreased in access network products. Orders received and net sales were affected by operators' expectations regarding the transition to distributed access architecture technology as well as the COVID-19 pandemic. Operating result decreased by 55.5% to EUR 3.6 (8.1) million, representing 2.9% (5.7%) of net sales. The decline in operating result was attributable to the decrease in net sales.

VIDEO AND BROADBAND SOLUTIONS
KEY FIGURES AND
STRATEGIC CORNERSTONES

VBS Net sales, M€

124.1

(2019; 141.4)

VBS Operating result, M€

3.6

(2019; 8.1)

- Grow the Distributed Access Architecture business and develop 1.8 GHz offering
- GoWest – Penetrate the US market
- Become market leader for public transport information and security solutions
- Build solid position with selected public authorities' security solutions

NETWORK SERVICES

Network Services offers comprehensive services for the design, construction and maintenance of access networks.

Orders received and net sales decreased by 13.2% to EUR 20.8 (24.0) million. Net sales declined due to the restrictions imposed in response to the COVID-19 pandemic and also in England, where the focus was on high-added-value design services and the scaling down of lower-margin project services. In Belgium, the decrease in net sales resulted from the discontinuation of the provision of loss-making field services. The restructuring costs associated with the operations in Belgium have been eliminated from adjusted operating result only at the Group level. Operating profit grew by 90.5% to EUR 1.5 (0.8) million. The growth of operating result in England and in Finland was attributable to the focus on high value-added design services and cost adjustments.

According to revised strategy Teleste divested its cable network field service operations in Germany in November.

NETWORK SERVICES KEY FIGURES AND STRATEGIC CORNERSTONES

NS Net sales,
M€

20.8
(2019; 24.0)

NS Operating result,
M€

1.5
(2019; 0.8)

- Provide high value-added service for network operators and the public transport industry

Network Products

We offer broadband network and video headend solutions and technologies for telecommunications and cable operators. Our smart and innovative portfolio allows operators to ensure top-quality broadband and TV services for their subscribers while reducing the total cost of network ownership and maintaining flexibility towards technology changes.

We have decades of experience in broadband network and video headend technologies and how they are best utilised for offering future-proof services with extremely high availability. Our main market areas are in Europe and North America.

A YEAR THAT EXPLODED THE USE OF INTERNET

During the first half of 2020, the world saw an unprecedented increase in broadband usage due to the COVID-19 pandemic. Video conference services were pushed to their limits and major streaming services had to cut down on their video bitrates to prevent networks from overloading at peak hours. While the pandemic gave a heads-up for network bandwidth, speed, and latency demands of the near future, it also caused a general slow-down in the cable industry and delayed operators' investment in new distributed access networks. This was widely reflected throughout the industry, and, despite a decrease in net sales, Teleste came through the year more unscathed than many of our competitors.

STEP BY STEP TOWARDS DISTRIBUTED ACCESS NETWORKS

Regardless of the COVID-19 pandemic, operators continued to upgrade their traditional HFC networks during 2020. We strengthened our market position in the category, although the sales volume declined in line with expectations. The technological transition from HFC networks to the use of distributed access architecture started with only marginal volumes and minor investments. However, there was uninterrupted progress in the development and testing of products that represent the new technology. Our major customers continued their integration and testing efforts, reaching readiness to commence distributed access field trials during Q1 2021 and targeting deployments from Q2 2021 onwards.

TECHNOLOGICAL HEAD START TO NEW MARKETS

Teleste has been developing expertise in distributed access architecture and related products for several years now, which gives us a technological head start relative to the competition. Our objective is to immediately achieve a strong market position when investments in the new technology begin, enter new markets, and offer an increasingly comprehensive range of products to customers. Combined with our strong market position and good reputation as a technology supplier in Europe, our expertise puts us in a good position to achieve success also in North America, home to the world's largest cable infrastructure market where network bandwidth is currently at full capacity and there is a clear interest among operators to adopt distributed access architecture to ensure future services.

DOCSIS 4.0 MAINTAINS CABLE INDUSTRY'S COMPETITIVENESS

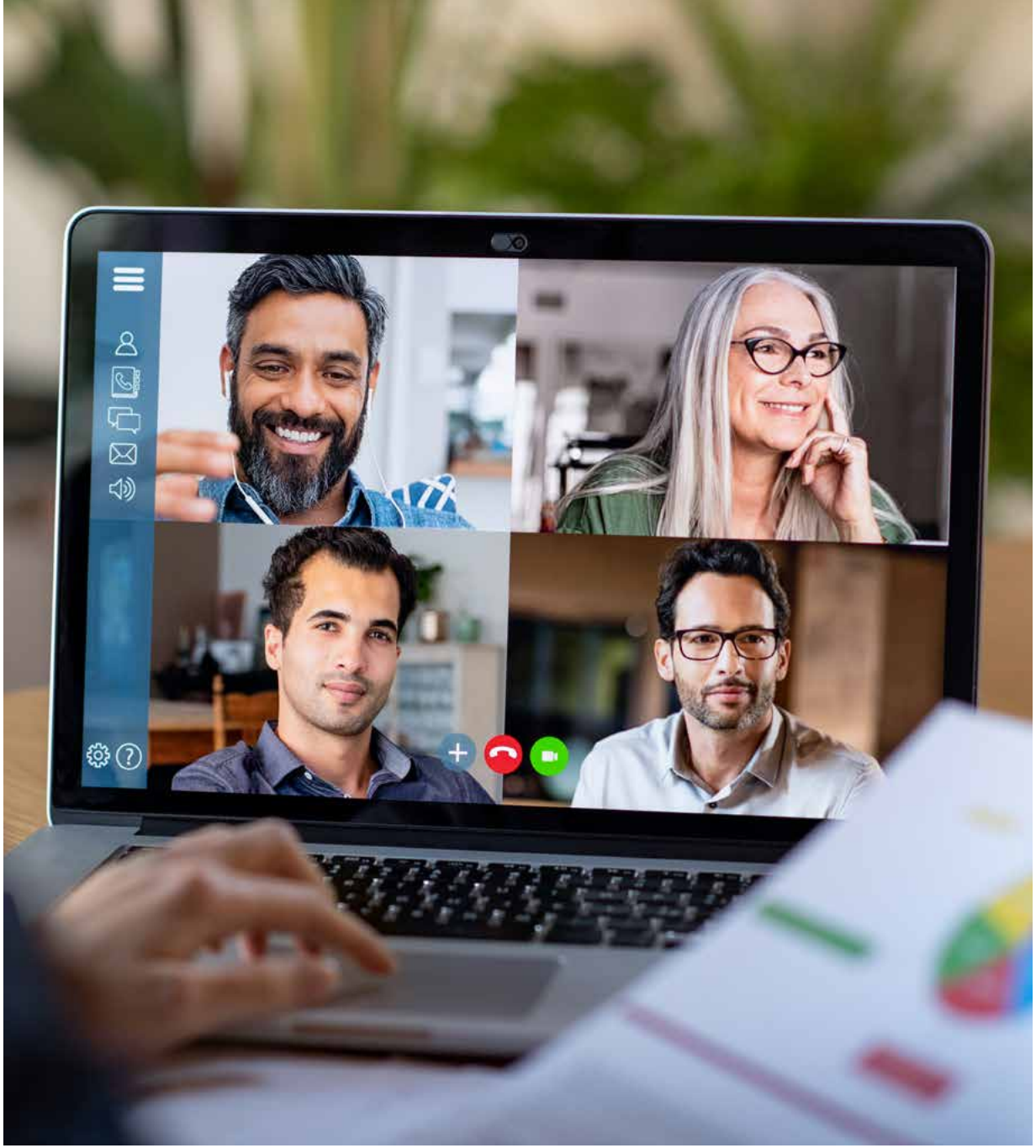
While distributed access architecture is reaching maturity, the cable industry has outlined its technology roadmap for the next decade under the DOCSIS 4.0 version of cable broadband standard. The standard will create an investment wave to 1.8 GHz networks and ensure cable's competitiveness compared to fibre-to-the-home networks for the next 10+ years. We are expecting the demand for 1.8 GHz-capable network passives to start in minor volumes during 2021 – ramping up in volumes during subsequent years, while the amplifier market will start in volumes in 2023 when both new products and operators are ready for mass deployments. The deployments are expected to start first in North America due to existing network constraints. Our innovations

and experience on intelligent network devices are unique in the market and hence we are seeing significant business potential for them once the 1.8 GHz market takes off.

STRATEGIC FOCUS FOR 2021

Our strategy for access network products is focused on distributed access architecture solutions and entering in the North American market. The customers need to develop the capacity, quality, and reliability of their networks to provide more comprehensive services and an improved user experience for their customers. Distributed access architecture enables the more cost-efficient development of an increasingly smart and powerful network that will meet the future bandwidth needs. Expectations are high regarding the commencement of distributed access architecture investments within the next few years. At the same time, the industry is getting prepared for the DOCSIS 4.0 technology wave.

> We already have the capacity to deliver products that represent the new technologies and new R&D projects will start in 2021."
>
> ***Hanno Narjus**, Head of Network Products*



Video Security and Information

We deliver comprehensive information and security solutions for public transport and authorities. Our main customer segments include public transport operators, rolling stock manufacturers and the public sector.

Our product portfolio covers a broad range of passenger information and on-board systems, display technologies, video surveillance systems and situational awareness systems. The solutions are often joined together with other operational systems, such as traffic control, alarm and crisis management systems.

We have a solid market position among leading train manufacturers and public transport operators and in demanding video security projects. Our main market areas are in Europe and North America.

AN EXCEPTIONAL YEAR – MARKET POSITION MAINTAINED

The market growth of public transport information systems has slowed down due to reduced use of public transport services caused by the COVID-19 pandemic. The market has declined in 2020 as investments and projects have been delayed, but it is expected to return to growth starting from 2021, provided that the pandemic does not lead to a prolonged negative shift in the market. The market growth for security and operational control systems has remained more stable.

After a good start into 2020, our operations were impacted in March due to the COVID-19 pandemic, as the customers needed to delay shipments and adjust project schedules. In order to maintain control of the operations we carried out several measures, including adjustments in the demand-supply chain, renegotiation of delivery agreements and implementation of temporary cost-saving measures. Our software-oriented projects were less impacted and continued largely as planned.

The project deliveries started to recover during Q3, and business volumes during Q4 were at a high level. The efficiency of production, the quality and delivery reliability of the products remained at a good level. In aggregate, the 2020 net sales remained on par with the previous year. Our order book continued to grow and, as usual, a considerable proportion of deliveries will be distributed over several years.

SMART SOLUTIONS FOR PUBLIC TRANSPORT OPERATORS AND AUTHORITIES

Looking into the future, we can see that the macro trends remain generally favourable to us, despite the temporary decline in the usage of public transport in many countries. Rapid urbanisation and the need to ensure people's safety in public places, ecological thinking, green mobility as well as the increasing popularity of smart digital systems provide a foundation for growing business for us in the coming years.

Public transport operators and other authorities must ensure smooth operation of services and infrastructure as well as the safety of people. To achieve this, public transport information systems, as well as video surveillance and situational awareness solutions are becoming increasingly smart and real-time, helping operators and authorities to automate operating processes and sharpen decision-making in exceptional situations. Cybersecurity is also becoming increasingly important in such real-time digital environments, creating a new imperative for any modern information system.

IN-HOUSE COMPETENCIES FROM DESIGN BOARD TO DELIVERY

Our delivery projects are becoming increasingly complex as intelligent real-time software is being deployed alongside hardware into complete systems which integrate into customers' operating environ-

ment. In addition, projects typically include varying degrees of customisation. Ensuring competitiveness requires us to continuously make R&D investments in new intelligent solutions and improving the productivity and cost-efficiency of operations is also necessary.

We have established a strong position among our customers through our innovative offering, high quality, and delivery reliability. Our comprehensive system knowhow, in-house software, and hardware engineering capability, as well as partnership approach in collaboration are being appreciated by our customers. Additionally, the company's solid financial standing and reputation are important factors for customers in their choice of partners.

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We are committed to developing operations and innovation capabilities for the benefit of our customers and for a smarter, safer, and smoother tomorrow."

***Esa Harju**, Head of Video Security and Information*

Network Services

Teleste Network Services provides services to telecom network operators in selected countries. The focus is on Fixed Access Network related engineering services, targeting both Fibre-to-the-Home (FTTH) as well as Cable / Hybrid Fibre-Coax infrastructure. Typical assignments are related to network planning services, complex project management for network upgrades and quality assurance services ensuring as-planned network performance after the deployment project. Our project management scope may include the physical network deployment on behalf of Teleste, or it may utilise third-party field deployment resources. Geographically, Teleste Network Services is operating in Belgium, the Nordics, Switzerland and the UK. Additionally, we have established a near-shore competence centre for network planning capabilities in Wroclaw, Poland.

STEADY MARKET GROWTH IN FTTH PLANNING SERVICES

In 2020, we have enjoyed a buoyant market for FTTH investments in the UK. The UK has been behind several other European markets for fibre deployments, but since 2018 the investment activities have been steadily on the rise. The speed of investment has been accelerated by Alternative Network Providers, challenging incumbent service providers British Telecom and Virgin Media. Our focus customers have been these Alt-Net operators, in addition to our long-term customer Virgin Media. With early successes in this customer base, we have been able to grow into one of the largest network planning consultancy services providers within the UK.

THE YEAR OF MISSION-CRITICAL BROADBAND NETWORKS

In all markets we continued to serve our long-term customers with HFC network-related upgrades. The volume of network upgrades was negatively impacted during Q2 and Q3 by the COVID-19 pandemic. During the lock-down months, our customers slowed down network upgrades in order to minimise network interruptions as the broadband services have been mission critical for remote work, remote training and remote health services. Towards the end of the year, most network upgrade projects returned to normal.

COMPLICATED TECHNOLOGY DRIVES DEMAND FOR EXPERTISE

Looking into the future, we are targeting to expand our scope of services to cover both fibre and HFC-related planning services in all markets where we operate. The future Distributed Access Architecture investments, as well as DOCSIS 4.0 upgrades will provide growth opportunities to deliver both products as well as associated engineering services to our customer base. In order to upgrade the existing network with DAA and DOCSIS 4.0 technologies, careful migration plans, as well as detailed network planning work is essential. The complex DAA deployments in particular will require professional project management with experience in DOCSIS, data communications and HFC technologies.

With ever-growing complexity in the products and technologies across Teleste's business portfolio, the demand for advanced engineering services is on the rise. While Video Security and Information and Network Products businesses are serving different markets, we are seeking synergies in common processes, systems and tools across our range of professional services. Digitalisation is offering further automation opportunities in our services roadmap.

The high market growth-rate has created a workforce shortage for planning professionals in the UK. To combat this, we have invested in our Polish **Centre of Excellence**, created our own **Training Academy** and exploited process automation to streamline the planning process where possible.

Building on technologies and innovations

NETWORK PRODUCTS

Technology transformation slowed but steady

While the current technology wave towards higher capacity broadband networks has been going on for quite some time, the COVID-19 pandemic has seemingly created an additional sense of urgency to network upgrades. Practical technology rollouts and deployments have been delayed due to lockdowns and restrictions caused by the global fight against the pandemic, but the industry is steadily developing and testing new technologies based on distributed access architecture and 1.8 GHz frequencies to ensure cable's competitiveness for the next 10+ years.

DISTRIBUTED ACCESS TRIALS AND EARLY ADOPTERS

Even though delayed by the COVID-19 pandemic, distributed access architecture (DAA) will be the next big technology step in the cable industry. In a nutshell, DAA means decentralising cable networks by relocating functions that have typically resided in the headend to intelligent fibre nodes, located closer to the subscriber. Moving functions into the network reduces the amount of hardware in the headend, and the architecture also requires cable operators to replace their analogue fibre networks with digital IP connections.

The first DAA deployments have already been carried out in Europe by a few operators. While deployments of the technology are expected to start in volumes during 2021, we were actively testing the technology in several customer laboratories in 2020 and several customers are reaching the status to move to field trials. Good progress has also been made regarding the compatibility of DAA products with existing network functions. We have also initiated co-operation with a growing number of potential technology partners, which is evidence of the increasing interest in our products.

DAA allows operators to unleash new bandwidth in cable networks with superior TCO benefits in comparison to technologies such as FTTH today and in the coming years. It also offers operators with a variety of migration paths to future services thanks to its open interfaces and the industry-wide interoperability activities. Additionally, DAA solutions provide us at Teleste an opportunity to take our Intelligent Networks technology deeper in the networks, to further improve service quality in the network and provide operators tools to maintain competitiveness.

SOLVING THE CHALLENGE OF VIDEO DELIVERY

The shift to distributed access networks also requires new approaches for carrying out a smooth delivery of video. Alongside IP distribution, operators need to keep their legacy digital vdeo broadcasting services, which are still consumed by millions of subscribers, up and running. To support operators with the technology transformation, we have continued investing in the latest generation of our well-known headend platform, Teleste Luminato 4X4. The versatile platform ensures smooth delivery of video services in both legacy and future networks, and several customer tests are taking place regarding its use in DAA networks. In addition, the platform works as a powerful edge QAM solution which has created good demand for the product among operators who need a flexible and scalable choice for video delivery already today.

PASSIVES ARE AHEAD OF THE DOCSIS 4.0 WAVE

The next big R&D wave in the cable industry after DAA will be started by the DOCSIS® 4.0 specification, released by CableLabs in 2020. The specification extends the usable spectrum in coax networks up to 1.8 GHz, providing cable infrastructures with more speed, less latency and improved cyber security. The big benefit of 1.8 GHz networks for operators will be that they allow building up to 10 Gbps multi-gigabit speeds without capex-intensive fibre

investment. When combined with distributed access architecture, this will enable operators to squeeze the maximum amount of capacity out of the existing infrastructures, both coax and fibre.

While the 1.8 GHz-capable DOCSIS 4.0 cable modems are expected to enter market in 2024, certain business drivers speak for starting gradual upgrades to 1.8 GHz already today. For many operators, passives are the first step towards the 1.8 GHz era as it pays to replace existing passive components with the latest technology as they become outdated. The idea is to work from the end-user homes into the network, ensuring each element installed is ready for the future. To support operators in this strategy, we launched our 1.8 GHz range of passives in Q2 2020, giving a head start to our comprehensive 1.8 GHz portfolio.

PRACTICAL APPROACH TO NETWORK TRANSFORMATION

The 1.8 GHz passive product range, like many of our R&D activities this year, are targeted to help operators with their practical technology challenges. Alongside both DAA and DOCSIS 4.0 deployments come much higher quality requirements, with every single component within a network infrastructure needing to be up to the specification to achieve the desired performance and smooth services. Hence, careful design of each network component as well as thorough understanding of the overall network infrastructure is needed when operators prepare for the upcoming changes in both architecture and frequency.

We have been a market leader for several years in Europe with our high-quality optical nodes. Working closely with our operator customers, our ambition is to maintain the same level of quality and performance in our future offering and become the most trusted partner for the next generation network products globally.

Intelligent technology to improve operational efficiency

In broadband networks, intelligent technology ushers in a more efficient way of working. It has been designed to help cable operators improve quality of service while keeping operational cost under control.

Our Intelligent Networks technology consists of remotely manageable and automatically adjusting broadband nodes and amplifiers, as well as their management software. With the technology, operators can get rid of the physical maintenance visits almost completely and achieve operational and business benefits, ranging from reduced truck rolls and power consumption to less help desk calls and higher service uptime and customer satisfaction.

The proven technology has been widely adopted in the UK and several other European markets. In March 2020, the global installed base of our intelligent network devices reached 320K+, supplemented with 330K+ devices with remote control and monitoring functions.

In North America, the majority of cable operators still rely on physically adjusting their devices in the field, and this is a tradition that we at Teleste aim to disrupt and modernise.

VIDEO SECURITY AND INFORMATION

Towards a safer and smoother tomorrow with intelligent software

Intelligent technology and situational awareness solutions play a key role in building a smarter and safer tomorrow. For us at Teleste, they also enable innovating beyond our traditional video management competences for the benefit of our customers. Our contribution to the digital transformation will foster new tools to utilise and manage real-time data and improve effectiveness and responsiveness in versatile operational infrastructures.

Digitalisation and real-time 4G/5G mobile network connectivity have paved the way for always-connected and fully interconnected systems, providing an opportunity to gather, share and manage information from various sources in real-time. This information can be used to increase security and ensure smooth services for people who travel, work, and spend time utilising public infrastructures. Intelligent technology and situational awareness solutions play a key role in this, and an increasing amount of intelligent real-time software is being developed and deployed to achieve this goal.

FROM TRUST TO IMPROVED DECISION-MAKING

In 2020 we saw the COVID-19 pandemic cause a massive drop in public transport ridership. While there likely is no going back to exactly how things were in the past, intelligent technology provides transport operators a way to restore the public's confidence and get back to a thriving level of daily rides. In future, we will see solutions based on real-time situational awareness that will help operators deliver a door-to-door experience to the passengers, so they can be efficient, safe and more comfortable about going back to leveraging public transport.

Modern situational awareness technologies, such as our S-AWARE® platform, also provide transport operators and authorities tools that go beyond 24/7 information of their operational infrastructure. The key principle of the S-AWARE® system is to improve efficiency of the decision-making process in unexpected incidents and critical situations. It assists operators in identifying and detecting safety risks and foster fast responses to events through advanced analytics and automated operating procedures.

DIGITAL TRANSFORMATION DRIVES CONTINUOUS INNOVATIONS

Since its launch in 2018, we have continued developing the S-AWARE® to address the operational needs of our customers who wish to extend the efficiency and responsiveness of their security systems beyond the traditional video surveillance. The journey has been exciting and we have now reached the level of first deployments. The future possibilities of the platform are numerous as the digital transformation continues to generate an abundant seedbed for intelligent technologies.

For technology companies like Teleste, the ongoing digital transformation brings significant opportunities to innovate on versatile smart city applications. Furthermore, it enables us to build on one of our core competences, the delivery and management of video, which remains a central part of situational awareness and public security systems. We are committed to continuing our innovation capability for the benefit of our customers and for a safer and smoother tomorrow.

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As the digital transformation continues, the importance of software has become evident as the underlying enabler of the development. Intelligent technologies are largely based on software, and software and hardware teams need to cooperate closely to realise the efficiencies and opportunities these technologies offer to our customers. This means that we at Teleste are also evolving; in addition to state-of-the-art hardware, we are today striving for innovations and solutions excelling in software.”

***Pasi Järvenpää**, Head of Teleste’s R&D*

INNOVATION

Transforming customer needs and industry trends into 5G solutions

Consistent innovation work and collaboration with industry organisations has paved the way for high rate data transfer solutions for future public transport communications.

After extensive preparations and pre-studies, the 5G standardisation activities were finally ramped up in 2015. By then it was clear that the goal of 5G was to offer a comprehensive platform to resolve the needs of all verticals which are dealing with storing, transmitting, or receiving data. The timing could not have been better for Teleste. For a while we had been acknowledging the increasing need for high rate wireless data transfer solutions, particularly in the public transport domain. The biggest demand for such solution was with video surveillance, especially when it came to transferring video recordings from trains to ground systems.

We took part in the 5G standardisation by contributing actively to the specification work within 3rd Generation Partnership Project (3gpp), a global initiative driving mobile broadband specifications. Our patented wireless offload and some other video-related solutions were eventually transformed as part of the 5G specifications under Future Railway Mobile Communication System (FRMCS). The work was started in the fall of 2015 and eventually in late 2018, the first versions of the specifications were approved in 3gpp.

In parallel with the 3gpp work, we have also been active in several other forums related to the public transport domain including Unife, the Association of the European Rail Supply Industry. In July 2019, a workgroup for 'Strategic Deployment Agenda for 5G Connectivity and Spectrum for Rail' was launched in Brussels, aiming to give future guidance to versatile EU funding programmes.

The 'Strategic Deployment Agenda for 5G Connectivity and Spectrum for Rail' was later split into the 'Gigabit train' section driving reliable and high-performance connectivity for passengers, as well the mission critical sections. The 'task force' consisting of major rail car manufacturers, operators, and vendors, was coordinated by the association of European Rail Infrastructure Managers (EIM) and the Community of European Railway and Infrastructure Companies (CER).

We contributed to the work of the 'Gigabit train' section both as a technology provider and a Unife representative of the task force. Our goal was to come up with a solution for the initial customer needs and industry trends we had discovered for the demand of high data rate links for various video-related use cases, with the most important probably being the transfer of video recordings from train to ground. The result of this work was eventually released in spring 2020.

One of the latest milestones in this 'saga' is the EU-funded, recently launched project 5GRAIL, which seeks to implement, verify and validate FRMCS and eventually give answers to some of the fundamental issues pointed out in 'Strategic Deployment Agenda for 5G Connectivity and Spectrum for Rail'. In addition to Teleste, the project gathers together many of the same rail industry players as the previous initiatives to create a FRMCS ecosystem for both trackside infrastructure and on-board use.

ANNUAL REPORT 2020

Customer cases

NETWORK PRODUCTS

A Remote PHY fairy tale came true in the hometown of author H.C. Andersen

Glenten implemented DOCSIS 3.1-based Remote PHY technology in their network in Denmark utilising Teleste's DAN300 Remote PHY node together with the Cisco CCAP core.

Glenten, one of the largest independent private cable TV operators in Denmark, had been looking at multiple ways to upgrade their cable TV infrastructure. Located in Odense, the hometown of the famous author H. C. Andersen, their target was to offer Gigabit broadband and TV services to local subscribers and other private networks in the rest of Denmark as well. With their existing DOCSIS® 3.0 CMTS from Cisco, the vision was to utilise the current investment and achieve operational, technical and subscriber benefits in upgrading to DOCSIS 3.1.

We were engaged in the project when Conscia, a long time Cisco Gold partner and systems integrator for Glenten, suggested an implementation of DOCSIS 3.1-based Remote PHY technology in Glenten's network.

Our DAN300 Remote PHY node was the obvious choice for the implementation as it had already reached a mature and market-ready level together with the Cisco cBR8 CCAP core.

The Remote PHY infrastructure allows Glenten to replace their existing analogue nodes and transmitters with an IP infrastructure called Converged Interconnect Network (CIN) that interfaces the Cisco CCAP core and DAN300 R-PHY node. It can expand access throughout the whole of Denmark connecting R-PHY nodes to the centrally located CCAP core and provide subscribers with Gigabit/s Internet and improved quality of service through high resilience to ingress noise.

Integration of our DAN300 and the new Cisco CCAP core into Glenten's operating environment was carried out by Conscia and Glenten, securing continuous and seamless operation even in the transition phase. The deployment provided Glenten with a very modern and future-proof cable TV infrastructure for many years to come and gives the operator the ability to provide Gigabit services at a fraction of the cost of a pure fibre infrastructure. The CableLabs specified open network structure also guarantees flexible implementation and addition of services as needed.

"We are pleased to see that the interoperable Remote PHY technology from Teleste and Cisco is able to provide us with a future-proof and tested platform for carrying out Gigabit services for our subscribers in the coming years."

***Claus Olsen**, Project manager, Glenten*

"Getting the Teleste RPD working with the Cisco cBR8 was easy in my opinion. The interop is great and both Teleste and Cisco are eager to help, if needed. The guys at Teleste deserve a lot of credit for their level of commitment. They clearly want the customer experience to be as good as possible. They are a pleasure to work with."

***Thomas Bützau**, System Engineer, Conscia*

NETWORK PRODUCTS

Automated ingress control improves quality of broadband services

Finland's largest cable operator and the leading pay TV provider DNA evaluated the impact of Teleste's software-based ingress control in identifying service issues in their network in Southern Finland. The aim was to improve the quality of broadband services to subscribers.

Ingress is a major cause of service outages and Internet connectivity problems in broadband networks. Typically, it enters the network through in-home devices such as faulty or damaged cables and connectors, cable modems, wall outlets and other faulty hardware. Once emerged, it travels up the network, affecting a growing number of subscribers and reducing their satisfaction with the operator's services.

A major problem with ingress is that searching for its exact entry point requires a lot of manual monitoring and maintenance work both in the network operations centre as well as in the field. Faulty devices are laborious to locate, and they often are placed behind locked doors at a subscriber's premises. This makes solving ingress issues slow and requires significant amounts of onsite visits annually.

To provide a new approach to battling ingress, we started a trial together with the Finnish operator DNA to measure the impact of SmartRIS - our automatic, software-based ingress detection function running in the Teleste Argus server - in identifying service issues in the network. The aim was to gather real, comparable data on how effectively the process can be utilised to help fix service issues and improve the subscribers' quality of service.

During the six-month trial, SmartRIS proved its usability in improving operational network management. It saved a significant amount of time and resources in the monitoring work, while also cutting down the time for repairs onsite through the availability of accurate location information. Working 24/7, SmartRIS also stored information about ingress searches and their status not only for real-time review but also for further analysis, helping the operator to understand what is happening in the network around the clock and plan upcoming upgrades and maintenance activities.

"Today, people and societies everywhere are relying on high-speed broadband networks to stay connected with their friends and families and ensure continuity of businesses in many cases. An automated ingress control process allows us to ensure that the quality of services experienced by our subscribers is high and that our network will be able to meet consumers' data transmission demands in all circumstances. For our personnel, the automated process gives time to concentrate on more value-adding tasks, instead of manually running the ingress control process."

***Mikko Nurmi**, Director, Network Architecture and Security for DNA*

VIDEO SECURITY AND INFORMATION

Safe and enjoyable journey for passengers on the Docklands Light Railway

We were given an exciting opportunity to work on improving the travel experience of passengers on one of the largest automated transport networks in the world when an international vehicle manufacturer, CAF, selected our on-board systems for 43 new driverless light rail metro trains aimed at adding capacity in the network from 2023 onwards.

With its annual passenger count reaching 122 million, the Docklands Light Railway in East London is the busiest light rail network in the UK and also one of the largest automated transport networks in the world. An international vehicle manufacturer, CAF, selected our on-board systems for its new trains for the route to offer passengers an improved travel experience.

Covering passenger information, public address and CCTV, as well as ultrawide TFT displays of the newest type, our on-board systems are especially designed to address the challenge by increasing the availability of real-time travel information. They also provide transit personnel with flexible tools to ensure the safety and security of passengers on the moving trains through the remote management and control of information and situations on-board.

An elemental part of our delivery will be software and applications for the management and distribution of passenger information and other types of content, such as advertisements. These allow the operator's personnel to manage the information and content displayed on moving vehicles remotely.

With the included mobile application, it is also possible to call moving trains, give train announcements, and respond to any possible emergency calls coming from the trains. High visibility for any visual information is guaranteed by our TFT displays with an ultrawide design.

The entire system is seamlessly integrated to support reliable, real-time connectivity between moving trains and the ground system. This is an essential requirement of a modern, automated transport infrastructure where trains run without a driver from one station to another.

VIDEO SECURITY AND INFORMATION

High-quality travel information for light rail users in Cologne

Teleste is bringing 462 super-high resolution RGB LED displays into the stations and platforms of the Cologne Transit Authority (Kölner Verkehrs-Betriebe AG) light rail network. The displays enable sharing content effectively and reliably across the entire light rail network of the City of Cologne, thus providing passengers with a great travel experience and access to travel information when and where they need it.

VIDEO SECURITY AND INFORMATION

Full speed ahead with modern mobility

International vehicle manufacturer Alstom selected our on-board solution to 50 of its next-generation Avelia Horizon very high-speed trains, designed for the French national railway operator SNCF Mobilités. Serving up to 740 passengers in each rail car, our solution will ensure the smooth flow of passenger information in the trains travelling at speeds of over 300 km/h at the heart of Europe.

VIDEO SECURITY AND INFORMATION

Increased situational awareness at Helsinki Underground

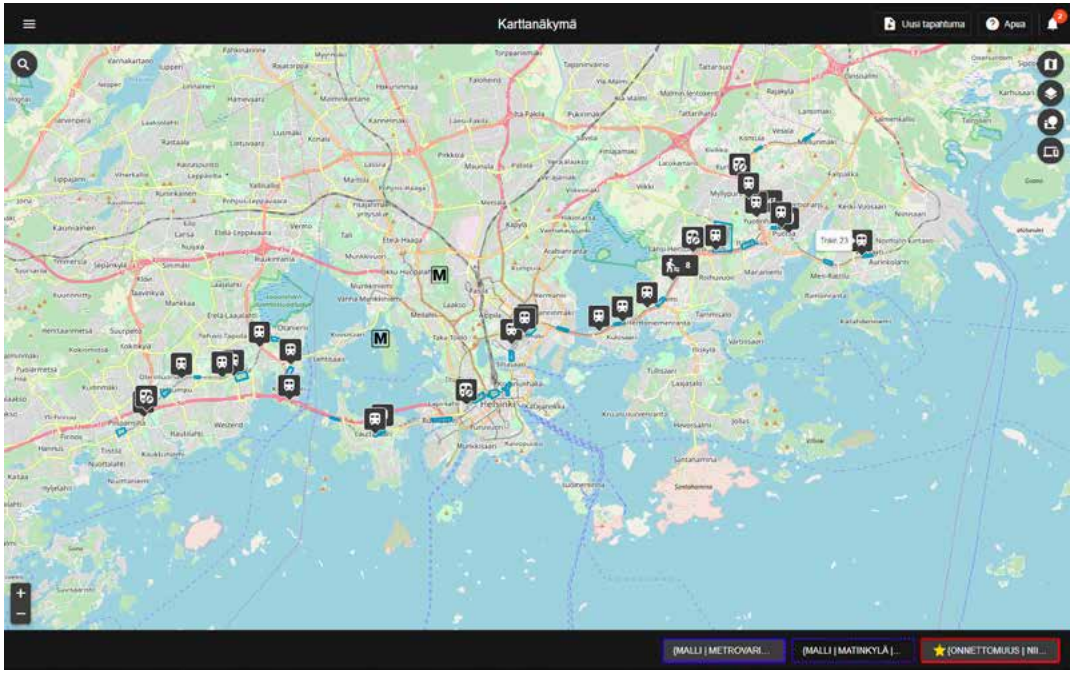
Helsinki City Transport drives improved situational awareness and safer travelling across the Helsinki metro system with our S-AWARE® situational awareness platform. We have tailored the platform for the needs of the customer and their surveillance centres, and its deployment was completed at the end of 2020.

Aiming to ensure the safety and security of the passengers and the entire metro system, Helsinki City Transport *("Helsingin kaupungin liikenneliikelaitos, HKL")* was looking for a solution to develop response capabilities and ensure a high service level, e.g., during possible security failures, states of emergency and other critical situations. The goal was to achieve an overview of the security and safety situation at Helsinki Underground by collecting information from multiple security and safety systems as well as from observations and presenting the information in one common graphical user interface.

Our S-AWARE® situational awareness platform provides HKL a solution that collects real-time information from various subsystems, data sources and sensory inputs and displays it in a unified, real-time view of the whole operational infrastructure. The system provides for the improved understanding of what is happening in the surroundings and creates grounds for sharp and efficient decision-making. Its easy-to-use tools assist surveillance centre operators in their daily work, offering:

- Improved information sharing between different surveillance centre and stakeholders
- A guide to more structured ways to handle different situations
- A comprehensive overview of security and safety situations at Helsinki Underground
- Information collection from multiple security and safety systems
- The presenting of information in one common graphical user interface
- Statistics to improve resource planning
- An overall understanding of security and safety requirements by enabling better reporting tools

The platform also enables efficient use of the system for multiple other operators, including the police, fire and rescue forces, traffic-related authorities and the cities of Helsinki and Espoo. Delivering the right information to the right people at the right time, the system is harnessed with high information and data security that guarantees protection from any unauthorised access.



NETWORK SERVICES

Collaboration of experience, skill, and patience benefits major UK customer

Our skilled and experienced Flomatik Network Services team worked closely with our customer, Virgin Media, to carry out a network upgrade with no unexpected subscriber impact.

Upgrading obsolete equipment improves Internet connectivity and quality of service for customers, but it can entail unavoidable service breaks. So the risk of outages needed to be minimised in migrating Virgin Media business and residential customers fed from the Camden hub site, planned for closure, to a new hosting site at Haringey in London.

Through solid project planning, together with Virgin Media, Flomatik's lead designers and project team planned a schedule of detailed activities - many of which had multiple dependencies. These practical steps and milestones incorporated opportunities for Virgin Media access control to remedy or 'roll-back' quickly, should unforeseen difficulties arise.

Implementing the project plan utilising our expert field engineering team ensured the migration project was completed with no unplanned outages for Virgin Media customers.

This excellent result was achieved by working in a day/night shift pattern. Daytime installations meant building and testing new capacity at Haringey Head End and adding new hardware into 100 street side cabinets fed from the Camden hub. To mitigate the inevitable customer impact, services were migrated overnight away from Camden hub on new optical feeds to Haringey. Customer impact was also minimised by moving each circuit individually – in every case ensuring outages were kept to just a few minutes.

In the unnerving quiet of London streets in coronavirus lockdown, the teams' work was often frustrated by missing connection cables, inconsistent quality of ageing street cabinets and obsolete or unsupported hardware. Every cabinet provided a different challenge, and the team worked with Virgin Media to calmly analyse and resolve each problem as it arose. In every case, the cabinet was successfully migrated with no unexpected customer impact.

The obsolete services fed from Camden are now all fed from Haringey, bringing better reliability, security, and management of services. With Flomatik Network Services' part of the project completed, the Camden site closed as planned at the end of June 2020.

One Teleste – our passionate professionals

A year of changes

The world around us is changing at a rapid rate, which requires us to change with it. In HR, we have taken measures that will help us ensure our competitiveness and achieve our goals. The redefined people strategy, focusing on leadership in 2020, plays a key role.

We are an international team with strong shared values: customer centricity, respect, reliability and result orientation. The cornerstones of our people strategy are leadership, development of employees' capabilities, a positive employee experience and smooth HR processes. We want to be an attractive and appreciated employer for all current and future Teleste employees, and we continuously develop our people strategy to correspond with the needs of modern working life.

In 2020, the management of the COVID-19 situation and seeing to the safety of employees became an additional focus of the people strategy.

"With regard to the first wave of COVID-19, we took proactive measures already in the initial phases of the pandemic and provided guidelines to the employees of all of our locations. In addition, we enhanced the management and reporting practices to match the pandemic that rapidly evolved in a critical direction. With precise guidelines and alternative ways of working, we have also been able to maintain a good operational level during the second wave. Teleste employees have understood the severity of the situation and acted in an excellent way to protect the company's ability to operate and the working community."

In addition to the measures caused by the pandemic, leadership was raised to the core of the people strategy in 2020.

"We have considered that by investing in leadership, we can support all of the areas of our people strategy: processes, employee experience and development of leadership," says **Tuomas Vanne**, SVP, People & Competence.

HR CHALLENGES

Teleste had offices in 20 countries and 860 employees at the end of the financial period. As a result of the divestment of the Cableway companies in Germany, the number of personnel decreased by 410 last year.

Due to the current COVID-19 pandemic and change in the demand for access network products brought about by technological transformation, we had to launch co-determination negotiations. A few employment relationships were terminated and employees were temporarily laid off to work shortened hours.

"We have also had to make difficult decisions, layoffs and even dismissals, but we have strived to minimise them," Vanne sums up.

Personnel

The Group's continuing operations employed an average of 856 (895) people during the review period. Of these, 650 (682) were employed by Video and Broadband Solutions and 206 (213) by Network Services. At the end of the review period, the Group employed 858 (867) people, of whom 47% (45%) worked abroad. Approximately 3% of the Group's employees were working outside Europe.

HR mission

Telestians enjoy and succeed in their daily work and achieve common goals while building a smart, safe and smooth future.

The cornerstones of our people strategy

- Talented Telestians
- Smart and harmonised HR processes
- Positive employee experience
- High quality leadership and management

86.3*	82.2*
I DO MY BEST TO ENABLE MY COLLEAGUES TO SUCCEED IN THEIR WORK	MY LINE MANAGER TRUSTS IN MY ABILITY TO FULFIL MY ASSIGNMENTS

** Employee Experience Survey 2020. Average, scale 0–100*

Leadership plays a key role in the company's success and good employee experience

The Teleste Leader training programme for Teleste's supervisors was launched in 2020 with the aim of adopting new uniform management principles. By developing the management environment, we aim to create a workplace in which all of our employees can and want to do their best.

Teleste aims to provide every employee with the opportunity to receive guidance in their work in accordance with the company's values and the employee's individual needs. The Teleste Leader training provides the best possible tools for this.

"The company has an excellent vision and mission and an intelligible strategy, but we felt that leadership had not been defined with sufficient clarity. Together with the employees and supervisors, we defined six principles to guide managerial activities and launched a training programme during which these principles will be deployed to day-to-day managerial work throughout the organisation. We also want to offer supervisors tools for the further development of leadership, which is already at a good level," says Tuomas Vanne.

The training programme offers new expertise that facilitates an increasingly efficient way of enhancing the employee experience and furthering Teleste's vision, mission and strategy.

"Both insights into modern leadership and practical tools for managerial work in line with our values and leadership principles are offered. The point of view of well-being at work is also strongly involved. In addition, due to the pandemic situation, the problems associated with the exceptional conditions have been included in the agenda of the training.

The training programme was developed in cooperation with Aalto EE (Aalto University Executive Education), and all 135 Teleste supervisors will attend it. The global training will take place virtually, and it will culminate in a Leadership Forum.

"The principles will be implemented by integrating them into measurement and the performance appraisal process. This will help people understand the impact of their own leadership behaviour on business. The aim is also to harmonise the company's global management practices."

Our way of working

CORPORATE RESPONSIBILITY

Social, economic and environmental responsibility

Corporate responsibility is an important part of Teleste's operations. We aim to produce solutions that support solving global societal challenges and drive smart, digital infrastructures that enable connectivity and bring new services to people and businesses. Our product and service offering promotes the safety and security of citizens as well as environmentally friendly and efficient public transportation and energy-efficient digital communications solutions. We also aim to conduct business and operations to promote sustainability.

At Teleste, we are committed to honest, transparent and reliable business as well as compliance with all applicable national and international laws and regulations, and we require suppliers and business partners to respect the same.

We observe laws, regulations and standards that pertain to bribery, corruption, money laundering and the financing of illegal activities. We are also committed to internationally recognised human rights standards, such as the United Nations (UN) Guiding Principles on Business and Human Rights and the International Labor Organization's (ILO) Declaration on Fundamental Principles and Rights at Work. We do not tolerate, in any context, the use of forced labour, human trafficking or child labour.

To ensure an inspiring and respectful workplace for our employees, we promote a diverse and equal working culture where any form of discrimination, harassment or other inappropriate behaviour is not tolerated.

Furthermore, we are committed to protecting the environment and supporting sustainable development. We continuously monitor our environmental performance against the set targets, and the results are regularly reviewed by our management. We have ongoing discussions with our customers, employees and cooperation partners to make sure we know where we stand and where we need to develop.

The new environment policy

To minimise negative impacts on the environment, we launched our new Environment Policy at the end of 2020. The policy is applied globally at all Teleste sites.

The most important environmental aspects related to our normal operations are energy consumed by products, emissions from transport, the generation of waste and energy consumption at the company's business premises.

According to the policy, we have defined the principles that steer our operations under three main themes:

- product design
- energy consumption and greenhouse gases
- materials and waste

In product design, we aim to cut the energy consumption of products or increase energy efficiency. We also aim to extend the life cycle of products by improving product reliability, durability and serviceability. Modular solutions support backwards compatibility in product updates. Easy dismantling and recyclability are taken into consideration in the early design phase.

We continuously improve our practices to reduce energy consumption at our premises. We use renewable energy in our factories when possible and we are committed to sorting all waste generated.

We also encourage our employees to reduce commuting emissions and we prefer remote maintenance in service business. The number of remote repairs is continuously growing and, in 2020, they covered 47% of all repairs.

Additionally, distribution centre locations are selected to minimise transportation distances and emissions, and our carbon footprint is reduced by prioritising rail and sea transport over air cargo, and by consolidating shipments when possible.

We strive to ensure that materials come from ethically and environmentally sustainable sources. We prefer to use recycled materials and we evaluate the materials used in our products and manufacturing, and we are committed to using all our resources efficiently.

Teleste was awarded the silver medal in the ECOVADIS business sustainability rating. The rating evaluates and provides feedback for future development in labour and human rights, ethics, sustainable procurement and the environment.

QUALITY

Investments in quality assurance

Teleste has continued with determined investments in quality assurance during 2020. The quality of products and operations are of growing interest to our customers, and we believe that their significance will certainly grow in the future. High reliability and secured functionality result in fewer service breaks, fewer on-site visits and fewer additional costs, which all lead to more satisfied end-customers.

There has been increasing collaboration with customers during the year to make sure that our development efforts in quality are directed to areas that are relevant to them. Supply chain quality assurance and quality control have been strengthened. The processes have been improved internally and with suppliers. Improved visibility with enhanced metrics has helped us focus our actions better and eased the launching of development programmes with suppliers. A collaborative approach secures ever better end-to-end operations to serve our customers.

As an example of customer quality awareness, Teleste operator customers follow closely the development of net promoter scores. The uninterrupted operation of data networks (a key factor in NPS) has become increasingly important as COVID-19 has changed many homes into small offices.

Reliable products are the cornerstone of building reliable networks, and investments in product quality eventually add to end-user satisfaction and the NPS of our customers.

The same interest in service availability applies to our security and information solution customers as well. As an example of our efforts made in the area of public transport, we have prepared to update quality assurance processes. This work encompasses practices related to the development and validation of products and components. Development of our manufacturing execution system is ongoing in order to ensure error-free manufacturing processes with new intelligent functions.

Teleste continues to improve quality assurance methods in 2021 – Quality makes sense.

OPERATIONS, LOGISTICS AND SOURCING

The updated sourcing policy guides purchases

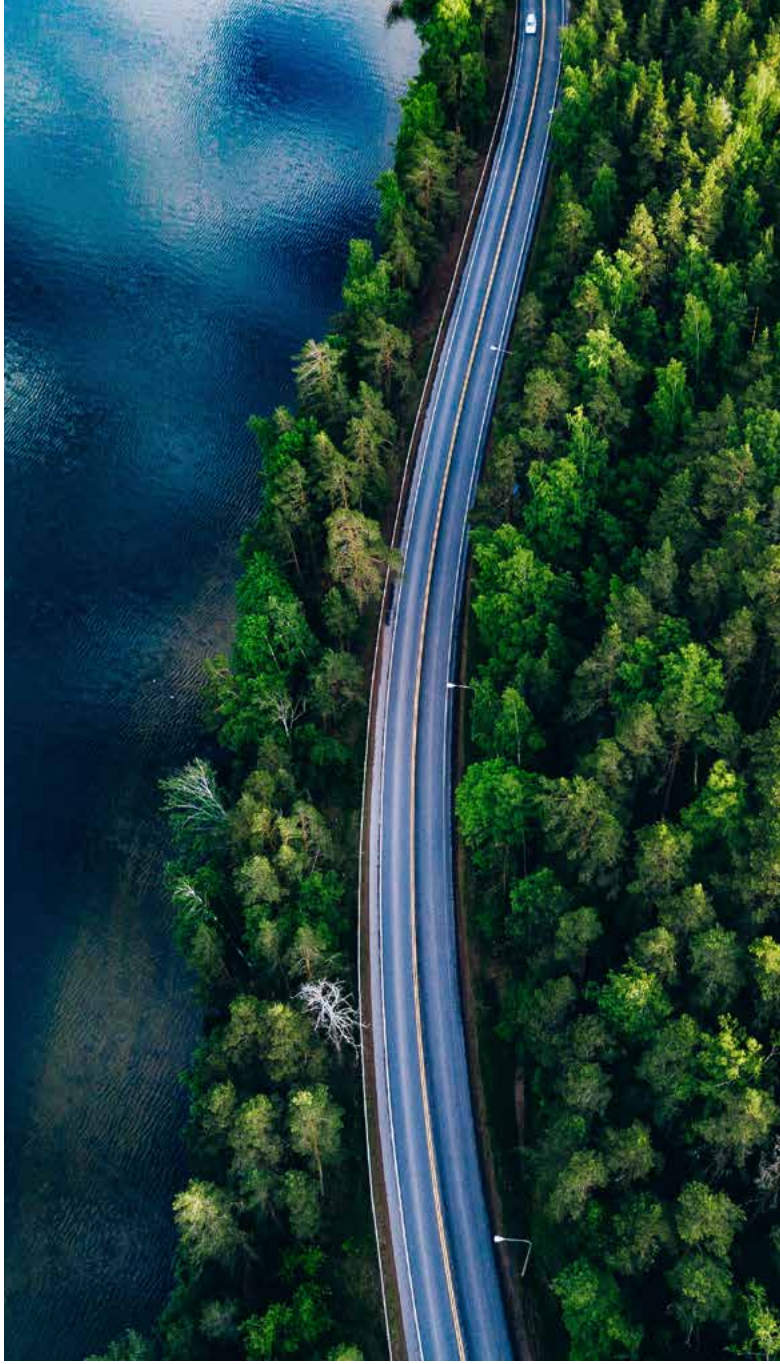
Teleste's international supplier network consists of suppliers from more than 20 countries. The selection of suppliers is based on Teleste's updated sourcing policy. With it, we aim to always ensure that our entire supply chain is ethical and responsible.

The fundamental prerequisite in our sourcing policy is the ethical and ecologically sustainable origin of the materials we use. Furthermore, all our suppliers must act in accordance with international legislation and standards when it comes to human rights, corruption, bribery and the legitimate origin and trade of natural resources.

Before engaging in more active cooperation, the realisation of the fundamental prerequisites is assessed separately with each supplier. For instance, new suppliers are requested to fill in a self-evaluation, which covers an extensive range of topics, from corporate governance, information security, occupational safety, corporate responsibility and compliance with law and environmental regulations to the organisation and its know-how and ability to innovate.

Our sourcing is divided into two main categories. Direct sourcing consists of various components, semi-finished products and modules used in the production of Teleste's products. Indirect sourcing concerns goods and services that Teleste uses for its own business operations.

The **Teleste Sourcing Academy** training programme for sourcing personnel continued in 2020. Training ensures that all sourcing chain participants have the same level of know-how. In addition, we want to inspire the exchange of ideas, strengthen the common operating models and promote co-operation across organisational and national boundaries. This time, training focused especially on supply chain management.



Foresight and simulation helped Teleste tackle component supply challenges

In 2020, Teleste maintained its delivery reliability despite the component sourcing problems caused by COVID-19. Ensuring normal component sourcing in 2020 required a lot of work and also a bit of luck. The sourcing office operating in connection with Teleste's Chinese sourcing and quality organisation played a key role when the impact of COVID-19 started to be seen in the availability of components.

"A significant part of our sourcing is of Chinese origin and help from the local office was indispensable when travel restrictions entered into force and factories were closed down on the government's order. Every other morning, I had a meeting with the Office Manager, going through all critical suppliers that had indicated that they cannot launch production after the Chinese New Year due to the coronavirus situation," says **Kalle Väänänen**, Head of Global Sourcing.

Also in normal circumstances, the period after the Chinese New Year, celebrated in February, is the most challenging time of the year when it comes to the sourcing of components. During the New Year, factory workers travel to their home regions and return at varying times. As a result, factories have difficulties in getting production running at full capacity.

"All companies sourcing products or materials from China make preparations for the New Year. We had acquired goods in advance for our main factory in Littoinen. In addition, our Forssa factory was undergoing an ERP system change and, in anticipation of potential problems, we had acquired some components in advance there as well. That was a stroke of luck for us."

An important factor in successful sourcing was also the simulation exercise that made it possible to focus sourcing on the critical components that were at risk of short supply.

"We source components from approximately 200 suppliers. In the simulation, we tested various scenarios about what would happen to our production and customer deliveries if a supplier delivery did not reach us due to the coronavirus crisis or another reason. It required a lot of work but enabled us to pinpoint the components where a shortage would stop production at our factories and focus sourcing on those components," says Väänänen.

OPERATIONS, LOGISTICS AND SOURCING

2020: Putting logistics to the test

The COVID-19 pandemic has had several impacts on our supply chain. The first shock was when Chinese product and component factories prolonged their New Year's holiday by 1-2 weeks outside Hubei province and even a bit longer inside Hubei. Production operations recovered fast, but the recovery period was longer for many long lead time components with long supply chains or long-lasting production processes.

With a short delay after the first shock, sea and rail transportation also recovered and damage remained limited. The second shock hit when the first wave rolled over Europe and our customers' operations slowed down due to Europe-wide restrictions in installation and transportation activities. Since the recovery to these first two hits, we have had occasional challenges with the component supply that have continued throughout the year.

On top of demand and supply challenges, the COVID-19 pandemic has had a significant impact on transportation costs. Beginning when the first wave hit China and the majority of personnel flights were cancelled, there has been a constant imbalance of demand and supply in airfreight capacity which has resulted in airfreight prices going up, even doubling in some lanes.

Towards the end of 2020 we experienced the same in sea freight and rail freight rates. With the second wave hitting in late autumn in Europe and the Americas and the overall peak season from Christmas to Chinese New Year, the demand for sea freight has grown, especially from China to the US. This has had a knock-on effect on sea freight from China to Europe. A lack of capacity and containers has resulted in sea freight rates fluctuating heavily.

Together with our suppliers, customers and carrier companies we have been able to control the damage quite well. Transparency throughout the end-to-end supply chain, meaning understanding how many products and components are in our different sales channels as well as our suppliers' and their suppliers' channels, and how these are moving around, has helped us to allocate and prioritise the available capacities.

As a result, possible stockouts have remained short-term, and we have been able to minimise the amount of lost sales due to availability challenges. However, the ability to predict, sense and respond with agility is merely a short-term corrective action. To further strengthen our supply chain resilience, we have conducted long-term preventive actions like optimising transportation modes, diversifying sources of component supply, and mapping out structural risks related to our supply network and near-sourcing.

Enabling digital innovations in our operations

2020 has sped up digitalisation at our Littoinen factory. Together with skilled and motivated people, we are able to develop and implement innovative solutions at a faster pace at our manufacturing site.

The Littoinen factory has been leading the way in highly efficient production and manufacturing quality. We have further strengthened our competitive advantages in Littoinen production along with a digitalisation based innovative intelligent picking system.

The intelligent picking system project was executed during 2020. Our goal was to create a system that guides our personnel to pick up the right materials, from the right location, at the right time and to bring them to the right place, which leads to significant improvements in quality and productivity. On top of that, operator training for the picking process should not take more than 5 minutes. The process also allows us to get rid of all printed papers and stickers, which in turn supports our effort towards environmentally friendly production.

The operator is guided through the process by a tablet which, in collaboration with Electronic Shelf Labels with seven colours of LED lights, points the operator to pick up materials from the right location. The instructive software contains all the needed information for that particular process step ongoing at the moment, such as how many components to pick up, which production cell to bring the materials to and any special instructions. Additionally, the system generates a comprehensive data set which will be utilised for further development.

Digitalised production processes help us improve productivity, agility and quality. The intelligent picking system generates data and possibilities for further digitalisation development at a faster pace in our factory and the whole supply network.

Our Management

Board of directors

TIMO LUUKKAINEN

M.Sc. (Econ.), M.Sc.(Eng.), MBA, Born in 1954,
Chairman of the Board since 2020
Member of the Board 2016–2020

Non-independent of a significant shareholder, Chairman of the Board in Tianta Oy.

Principal occupation:
Board professional

Primary working experience:
Ensto Group, President and CEO 2009–2016
Evervent Oy, CEO 2007–2009

In France, England and in Switzerland during 1992–2008:
Member of the Management Group of French subsidiary of General Motors, EMEA director of Hyster and Mouvex -consortiums

CEO of Irrifrance

CEO of ABB subsidiary 1985–1992

CEO of UPM Kymmene subsidiaries 1981–1985

Other elected positions of trust:
Tianta Oy, Chairman of the Board 2018–

JUSSI HIMANEN

M.Sc. (Industrial Engineering), Born in 1972
Member of the Board since 2019

Independent of Teleste and its significant shareholders.

Principal occupation:
Ramboll Finland, Director Business Development 2018–

Primary working experience:
Comptel Corporation, Senior Vice President, Strategy 2012–2017

Nokia, Nokia Networks, Nokia Siemens, various positions 1998–2011

Sonera 1997–1998

VESA KORPIMIES

M.Sc. (Econ.), Born in 1962
Member of the Board since 2019

Non-independent of a significant shareholders, CEO and Board member in Tianta Oy.

Principal occupation:
EM Group Oy, CEO 2018–

Primary working experience:
Kymppi Group Oy, COO 2015–2017

Exel Composites Oyj, CEO 2008–2014

Exel Composites Oyj, several positions in Finland and in Germany 1987–2007

Other elected positions of trust:
Axopar Boats Oy, Member of the Board 2020–

Tianta Oy, CEO and Member of the Board 2019–

Efla Oy, Chairman of the Board 2018–

Meconet Oy, Member of the Board 2016–

Scanpole Oy, Member of the Board 2015–

MIREL LEINO-HALTIA

PhD (Econ.), CFA, Born in 1971
Member of the Board since 2020
Chairman of the Audit Committee 2020–

Independent of Teleste and its significant shareholders.

Principal occupation:
Professor of Practice, Aalto University 2019–
Board Professional

Primary working experience:
PwC Oy, Partner, consulting 2009–2018
PwC Oy, several positions 2000–2008

Other elected positions of trust:
Euroclear Finland Ltd., Member of the Board, Chairman of the Audit Committee, Member of the Governance, Nomination & Remuneration Committee 2018–

Member of the Board in several companies within LocalTapiola Group 2019-

Indufor Ltd, Chairman of the Board of Directors 2019–

Savings Banks Research Foundation, Member of the Board 2020–

HEIKKI MÄKIJÄRVI

M.Sc. (Eng.), Born in 1959
Member of the Board since 2018

Independent of Teleste and its significant shareholders.

Principal occupation:
Telia Ventures, CEO 2018–

Primary working experience:
Airbus Ventures, General Partner, 2015–2016

Deutche Telekom AG, Senior Vice President, Venture Capital & Group, Business Development and Venturing, 2011–2014

T-Venture, Chairman of the Supervisory Board, 2011–2014

Openwave systems INC, Senior Vice President, Business Development, 2009–2011

Accel Partners, Venture Partner, 2002–2009

Cisco Systems, Technical Director, 1998–2001

Nokia, several management positions in Finland and in Germany, 1983–1998

KAI TELANNE

M.Sc. (Econ.), Born in 1964
Member of the Board since 2008

Independent of Teleste and its significant shareholders.

Principal occupation:
Alma Media Corporation, CEO 2005–

Primary working experience:
Kustannus Oy Aamulehti,
Managing Director 2001–2005

Kustannus Oy Aamulehti,
Deputy MD 2000–2001

Other elected positions of trust:
Tampere Chamber of Commerce and Industry, Member of the Board 2018–

The management group

JUKKA RINNEVAARA

President and CEO
M.Sc. (Econ.) Born in 1961

Joined Teleste in 2002

Primary working experience:
ABB Building Systems, Group Senior Vice President 2001–2002

ABB Installaatiot Oy,
President 1999–2001

Other elected positions of trust:
Vaisala Corporation,
Member of the Board 2019–

Technology Industries of Finland,
Member of the Board 2019–

JOHAN SLOTTE

Deputy CEO
LL.M, EMBA Born in 1959

Head of Network Services in Germany, Austria and Switzerland

Head of Corporate Business Development and Legal Affairs

Joined Teleste in 1999

Member of the Management Group since 1999

Primary working experience:
Uponor Group, Various directorial positions 1989–1999,
incl. CEO, Uponor Poland

JUHA HYYTIÄINEN

CFO
M.Sc. (Econ.) Born in 1967

Joined Teleste in 2013

Member of the Management Group since 2013

Primary working experience:
Nokia Corporation, Business Controller and Director positions in Finance and Control 2000–2013

Ensto Saloplast Oy, Finance Director 1998–2000

OMG Kokkola Chemicals Oy,
Finance Manager 1994–1998

TUOMAS VANNE

People and Competence,
Senior Vice President
M.Sc. (Military Science), Born in 1979

Joined Teleste in 2019

Member of the Management Group since 2019

Primary working experience:
Lidl Latvia and Estonia, Head of HR 2018–2019

Lidl US LLC, Senior Director – HR 2017–2018

Lidl US LLC, Director – Adminstration Organization 2016–2017

Lidl Finland Ky, various HR related management positions 2012–2016

Finnish Defence Forces, various officer positions 2004–2012

HANNO NARJUS

Network Products,
Senior Vice President M.Sc. (Econ.)
Born in 1962

Joined Teleste in 2006

Member of the Management Group since 2007

Primary working experience:
Nokia Corporation, various managerial positions 1996–2006

Teleste Corporation, Director, Sales/ Continental Europe 1989–1996

ESA HARJU

Video Security and Information,
Senior Vice President M.Sc. (Eng.)
Born in 1967

Joined Teleste in 2016

Member of the Management Group since 2016

Primary working experience:
Independent Consultant 2015–2016

Ixonos Plc, President and CEO 2013–2015

Nokia Siemens Networks Finland Oy, CEO 2012

Nokia Siemens Networks, Head of Nordic & Baltic Region 2010–2012

Employment by Nokia and Nokia Siemens Networks since 1991

Other elected positions of trust:
Taiste Oy, Chairman of the Board 2016–

PASI JÄRVENPÄÄ

Research and Development,
Senior Vice President, M.Sc. (Eng.)
Born in 1967

Member of the Management Group since 2013

Primary working experience:
Joined Teleste in 1994

MARKUS MATTILA

Operations, Logistics & Sourcing,
Senior Vice President, M.Sc. (Eng.),
Born in 1968

Joined Teleste in 2008

Member of the Management Group since 2008

Primary working experience:
Nokia Mobile Phones/Nokia Corporation, Manager and Director positions in Operations, Logistics and Sourcing 1993–2008

Information for shareholders

TELESTE SHARE

Teleste Corporation is listed on Nasdaq Helsinki in the Technology sector and is quoted in the small cap segment. The company shares are included in the book-entry securities system. The company has one series of shares. In Annual General Meeting each share carries one vote and confers an equal right to a dividend.

On 31 December 2020 Teleste's registered share capital stood at EUR 6,966,932.80 divided in 18,985,588 shares.

As to the company share price in 2020, the low was EUR 3.51 (5.04) and the high EUR 5.78 (6.80). Closing price on 31 December 2020 stood at EUR 4.49 (5.34).

- Trading code TLT1V
- ISIN code FI0009007728
- Reuter's ticker symbol TLT1V.HE
- Bloomberg ticker symbol TLT1VFH

FINANCIAL RELEASES IN 2021

Teleste Corporation Financial Statement 2020 was released on 11 February 2021.

Other releases during 2021

- Interim report January–March: 6 May 2021
- Half year financial report January–June: 12 August 2021
- Interim report January–September: 4 November 2021

Financial reports are published as stock releases. Publications are available on Teleste's website both in English and in Finnish.

Teleste meets investors, analysts and representatives of the media in news conferences set up in connection with releases of financial reports.

Silent period

Silent period begins 30 calendar days before the publishing of the Interim Reports, Half Year Financial Report, and Financial Statement Release and lasts until the publishing of the Interim Reports, Half Year Financial Report, and Financial Statement Release. During silent periods, Teleste's spokespersons refrain from discussing and commenting on issues related to the company's financial performance or meeting with capital market representatives.

ANNUAL GENERAL MEETING

Teleste Corporation's Annual General Meeting (AGM) will be held on 7 April 2021 at 14:00. The meeting will be held under special arrangements without shareholders' or their proxy representatives' presence in the company's headquarters, at the address Telestenkatu 1, 20660 Littoinen.

The Board of Directors of the company has resolved on an exceptional meeting procedure based on the temporary legislation approved by the Finnish Parliament on 15 September 2020. In order to limit the spread of the COVID-19 pandemic, the Annual General Meeting will be held without shareholders' or their proxy representatives' presence at the meeting venue. This is necessary in order to organize the General Meeting in a predictable way while taking into account the health and safety of the company's shareholders, personnel and other stakeholders.

PROPOSAL FOR DISTRIBUTION OF DIVIDEND

The Board of Directors proposes to the AGM that, based on the adopted balance sheet, a dividend of EUR 0.12 per share be paid for the fiscal year that ended on 31 December 2020.

- Dividend ex date at 8 April 2021
- Dividend record date at 9 April 2021
- Payment of dividend at 16 April 2021

CHANGES IN SHAREHOLDERS' CONTACT INFORMATION

The shareholder register is maintained by Euroclear Finland Oy. Shareholders are kindly requested to inform the custodian of their book-entry account of any changes in contact details.

For more information:
www.teleste.com/investors

About the Annual General Meeting:
www.teleste.com/AGM

Information by email:
investor.relations@teleste.com

www.facebook.com/telestecorporation
www.twitter.com/telestecorp
www.linkedin.com/company/teleste
www.slideshare.net/telestecorporation
www.youtube.com/telestecorporation
www.vimeo.com/teleste

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