

# 2019 H1

Half-Year Report

**mynaric**

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Flight Terminals

Ground Terminals

# Introducing the Mynaric Product Portfolio

INTRODUCTION

## HAWK AIR

Flight Terminal for Air Operations

## HAWK SPACE

Flight Terminal for Inter-Satellite & Satellite-to-Ground Operations

## CONDOR

Flight Terminal for Inter-Satellite Operations

## RHINO

Ground Terminal for Space Operations

## ARMADILLO

Ground Terminal for Air Operations

No other company in the world can offer this range of laser communication products at the maturity and at the cost that Mynaric can.

It is an unparalleled line-up of flight and ground terminals, 10 years in the making, designed to deliver high-speed, long distance wireless data transfer in space, in the air and from both to the ground.

Each product in this game-changing portfolio has been designed to the very highest of specifications; developed to change the very nature of connectivity from the air and space. Serially produced to guarantee reduced costs and available with short lead times to ensure aerospace networks enable global connectivity.

As the product range presented here reaches production maturity, we are now situated in a new building with a purpose-built production floor dedicated to series manufacture and an increasing number of employees working on production. All of this under the direction of a recently-appointed, customer-centric management.

The unveiling of this product range marks the moment we leave our project work and prototype-development behind us and begin our work building the number of units that the market demands at an attractive price and increased availability to allow the aerospace network builders to fulfil their plans for global connectivity.

## TECHNOLOGY HIGHLIGHTS



### Ultra-high-data rates and link distances

Up to 10 Gigabit data transfer per second (Gbps) across 500 kilometers (300 mi)



### Secure data transmission

Highly resistant to tapping, jamming, spoofing and electro-magnetic interference (EMI) compared to RF systems



### Low weight

At under 6 kg (13 lb) ideal for short-, medium- and endurance-class UAS



### Integrated inertial navigation system

Fully integrated positioning system

## AREAS OF OPERATION

- Fixed and mobile inter-platform communication with no latency (data and image transmission)
- Airborne broadband internet coverage
- UAS/UAV network control and Beyond Visual Line of Sight remotely controlled aircraft connectivity

## KEY FEATURES

- Hyperhemispherical field of regard
- No RF signature during communication
- Low mass, weight and power consumption
- Built to withstand high vibration, extended temperatures and harsh environment

# HAWK AIR

## Laser Communication Terminal for Air Operations

The HAWK AIR laser communication terminal is designed with the most advanced sensor technology available and - twinned with a small size, weight and power (SWaP), long link distances and high data rates - is optimized for air-to-air and air-to-ground scenarios.

Flight Terminal

# HAWK SPACE

Laser Communication  
Terminal for Inter-Satellite  
& Satellite-to-Ground  
Operations

Our HAWK SPACE terminal has been designed in response to the requirements of some unique constellations entering the market.

*coming 2020*



We do not want to share details just yet but **we are seeing some unique opportunities out there** that require something special.

More details soon. Stay tuned!

# CONDOR

## Laser Communication Terminal for Inter-Satellite Operations

The CONDOR laser communication terminal provides backbone inter-satellite connectivity in low Earth orbit (LEO).

It is capable of establishing links for inter-plane scenarios independently of satellite motion (with Coarse Pointing Assembly) and intra-plane connections (without Coarse Pointing Assembly).



### TECHNOLOGY HIGHLIGHTS



#### Ultra-high-data rates and link distances

Link distances of just under 8,000 km (5,000 mi) and data rates of 10 to 20 Gigabits per second; 100 Gbps in next generation



#### Secure data transmission

Highly resistant to tapping, jamming, spoofing and electro-magnetic interference (EMI) compared to RF systems



#### License-free

No ITU or FCC frequency coordination required for the laser channels



#### Durable

Built for 7 years lifetime in LEO polar orbit

### AREAS OF OPERATION

- Inter-satellite communication links in low Earth orbit (LEO)

### KEY FEATURES

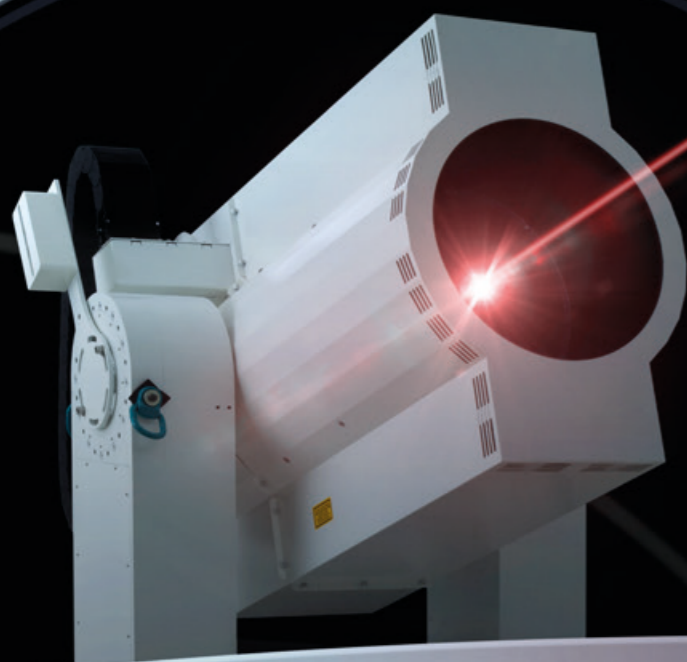
- Full in-orbit self-calibration
- Layout and build allow for smooth integration into satellites
- Power output and data rate can be adapted for various demands without significantly impacting SWaP
- Designed to withstand high vibration, extended temperature ranges, and vacuum (or near-vacuum) environments

Ground Terminal

# RHINO

## Laser Communication Ground Terminal for Satellite Operations

The RHINO ground terminal provides for unprecedented high-speed and high-throughput downlink and uplink for satellites in low Earth orbit (LEO).



### TECHNOLOGY HIGHLIGHTS



#### Ultra-high-data rates and link distances

Downlink distances up to 1,400 km (870 mi) between satellite and ground at up to 10 Gigabits per second (Gbps), 100 Gbps in the near future



#### Secure data transmission

Highly resistant to tapping, jamming, spoofing and electro-magnetic interference (EMI) compared to RF systems



#### License-free

No ITU or FCC frequency coordination required for the laser channels

### AREAS OF OPERATION

- Satellite access point to terrestrial network infrastructure

### KEY FEATURES

- Integrated positioning system
- Fully robotic (remote) operation
- Remote system health status
- Designed to withstand wide temperature range during operation

# ARMADILLO

## Laser Communication Ground Terminal for Air Operations

The ARMADILLO ground terminal is optimized for bidirectional air-to-ground airborne data communication applications.

### TECHNOLOGY HIGHLIGHTS



#### Ultra-high-data rates and link distances

Downlink distances up to 50 km (30 mi) between fixed and mobile airborne platforms and the ground at up to 10 Gigabit per second (Gbps)



#### Secure data transmission

Highly resistant to tapping, jamming, spoofing and electro-magnetic interference (EMI) compared to RF systems



#### License-free

No ITU or FCC frequency coordination required for the laser channels



#### Portable and easy to install

The terminal weighs just 70 kg (154 lb).

### AREAS OF OPERATION

- Fixed and mobile interplatform communication with no latency (data and image transmission)
- Airborne broadband internet coverage
- UAS/UAV network control and Beyond Visual Line of Sight remotely piloted aircraft systems (RPAS) or stratospheric platforms

### KEY FEATURES

- Low mass, power consumption and heat dissipation
- Fully robotic (remote) operation
- Wide temperature range during operation



# 1 Shareholders

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Dear shareholder,  
 You will, we are sure, have been as pleased as we were with our recent announcement that a customer has signed a contract with us to commit to a mission utilising Mynaric space terminals.

The contract we have signed is for what is known as a 'product validation' mission which, on successful completion, gives a customer the required confidence in our products prior to moving to the larger-scale roll-out of satellites, each of which will typically require multiple laser communication products.

This initial contract is a blueprint for the kind of missions we are focusing on in the current market phase.

We now boast a range of laser communication products that cater for all three key segments of our industry: space, air, and ground. This report offers, for the first time, a public view of the product portfolio that we will use to capitalize on the commercial laser communication market as it moves into the new phase we expect in 2020.

Our product portfolio presented in the preceding pages boasts two types of ground terminals – the ARMADILLO and RHINO – created as terrestrial counterparts for airborne and spaceborne flight terminals that need to communicate with the ground. In the airborne segment, we are proud to publicly present the HAWK *AIR* flight terminal: the first units of which, after its industry unveiling at the Paris Air Show in July 2019, we plan to make available by the end of this year. And in the space segment, we have our flagship constellation product – the CONDOR flight terminal – which is uniquely designed to cater to the needs of most satellite constellations. Lastly, and in response to the requirements of some unique constellations in the market, we offer a space version of our HAWK flight terminal. We will officially announce this product and reveal more details of its capabilities very soon.

Our HAWK *AIR* terminal is now the only commercially available, scalable laser communication product for airborne applications available on the market. Similarly, our two space flight terminals the CONDOR and HAWK *SPACE* will likely both be market firsts when initial units are scheduled to

become available to customers in 2020. And we are not speaking about just one or two units: today, Mynaric has – to our knowledge – more space-grade laser communication units in production schedule than have ever been launched into orbit by the aerospace industry.

The financial figures in today's report paint a picture of a company in the final phases of product development before it starts to deliver serially manufactured products to customers. Given that we are in the middle of a transformation from a project company selling customized and multi-year development projects to a product company selling standardized products deliverable in a couple of months or even weeks, revenues in H1 2019 set out later on in this report are mostly the remains of heritage project business.

While from the outside little could be seen in the last few months of our progress, we were working rigorously on finishing our products for their debut in late 2019 and 2020. Indeed, an inevitable consequence of this activity is that so little of it is allowed to be publicized. But with the availability of first units imminent, we are now looking forward to finally starting to sell to the market exactly what our customers demand: affordable laser communication products for aerospace networks.

Mynaric is increasingly active on both sides of the Atlantic. Bulent Altan has hit the ground running since his appointment in March of this year and is currently overseeing not only the final product development work on our space terminals but also a relocation and expansion of our American headquarters as we move physically closer to customers whose interest in Mynaric has been growing exponentially in the last six months.

The market activity section of this report details no let-up in the frenetic rate of activity occurring in the aerospace connectivity market and we are ensuring that we are in a position, in the coming months, to support any additional customer missions with an unparalleled product range underpinning our offering.


As a result, the focus of the Executive Board remains on final product development, upshifting production, and developing and feeding commercial relationships with customers.

None of our recent successes would be possible without the astonishing efforts of our gifted – and growing – workforce. Levels of activity here in Germany in the last six months show a company focused and determined to deliver Mynaric to the apex of the aerospace connectivity market and the Executive Board thank them all for their ingenuity, hard work and unwavering belief in Mynaric's mission.


And, of course, we thank you – dear shareholder – for your continued belief in Mynaric's mission and your support as we move along the road towards reaching it. It has been a long and winding road up until this point as we prepared our full product portfolio, but we hope that you agree with us that we are now well on the way to future successes as we strive towards being the world-leading supplier of laser communication products.

Gilching, October 2019

The Executive Board

  
 Dr Wolfram Peschko

  
 Bulent Altan

  
 Hubertus von Janecek

## MANAGEMENT – EXECUTIVE BOARD



### Dr Wolfram Peschko

Dr Wolfram Peschko has been a member of the Mynaric Executive Board since 2011 and leads on finance, administration and strategic development.

Wolfram possesses more than 30 years of experience in senior management, gained at various companies with sales of more than €50 million and headcounts of up to 1,000 employees.

He has realized investments in Mynaric totalling €50 million, including an IPO which was covered over 4-times and which raised €27 million. Wolfram has also grown Mynaric from single-digit staff to an around 90-person strong company.

### Bulent Altan

Bulent Altan is a veteran of the New Space industry and managing director of Mynaric's space activities.

Bulent began his career as one of the first employees at the then newly-established SpaceX in 2004, having graduated from Stanford University and following completion of his studies at the Technical University of Munich.

At SpaceX he was essential to growing the company's avionics department from seven people to over 200, and was, as Vice-President, responsible for the avionics of the Falcon rockets as well as the Dragon capsule. In his most recent role for the company, Bulent was Vice-President of Satellite Mission Assurance, including for SpaceX's Starlink satellite mega-constellation.

Bulent left SpaceX between 2014 to 2016 to co-found the startup ecosystem and aerospace industry in Europe, during which time he held positions as partner and mentor at the Munich area industrial start-up accelerator TechFounders, as well as taking on the role of Head of Digital Transformation and Innovation at Airbus Defence and Space.

He is also a co-founder and partner of the venture capital firm Global Space Ventures which invests exclusively in space-related businesses and he joined Mynaric in early 2019 to drive adoption of laser communication technology in the satellite industry.

### Hubertus von Janecek

Hubertus von Janecek leads on sales and production of Mynaric's airborne products.

A former Vice-President of Bosch Sensortec, Hubertus brings over 20 years' experience in sales of deep tech products having served as CEO, founder and sales director of various market-leading companies.

Hubertus is overseeing the manufacturing process of our airborne laser communication terminal, ensuring that our serially produced products are compatible with the largest number of airborne customers' needs. He is also responsible for Mynaric's serially produced ground terminals for airborne and space applications.

## MANAGEMENT – SUPERVISORY BOARD



#### Dr Manfred Krischke (Chairman of the Supervisory Board)

Dr Manfred Krischke gained his doctorate in aerospace engineering from the Technical University of Munich.

He is the co-founder and CEO of CloudEO and was the founder and CEO of RapidEye before its acquisition by Planet in 2015. In addition, Dr Krischke has worked in several technology companies in top positions during his professional career.

#### Dr Gerd Gruppe

Dr Gerd Gruppe holds an engineering degree (Dipl.-Ing.) which he obtained from RWTH Aachen. In addition, in 1985 he completed his PhD on energy marketing at the University of Augsburg.

Since the end of the 1980s, Dr Gruppe was employed in various positions at the Bavarian Ministry of Economic Affairs and in this capacity he was involved in the development of the Galileo Control Centre, the Robotic and Mechatronic Centre – both at the DLR location in Oberpfaffenhofen – and the Development of the ESA Business Incubator and its predecessor organisations. Dr Gruppe was a member of the Executive Board of the German Aerospace Center (DLR) where he was the head of Space Administration between April 2011 and end of 2017.

#### Dr Thomas Billeter

Dr Billeter holds an engineering degree and an MBA from the ETH Zurich as well as a PhD in economics from the University of Zurich.

He has also completed the Advanced Management Program of Harvard Business School. He started his career with IBM, Ascom and McKinsey and then took over several C-level positions in innovative technology companies. He is now a successful Investor and Business Angel and serves as a board member in a wide range of technology start-ups.

#### Peter Müller-Brühl

Peter Müller-Brühl is the COO and member of the executive board of GreenCom Networks AG. He has 10 years' experience as a serial entrepreneur in various technology start-ups as co-founder, angel investor and member of executive management teams.

Before his entrepreneurial career Peter held executive management positions in the publishing automotive industry, in his last corporate role acting as CIO/CTO Germany for DaimlerChrysler AG. He holds business degrees from Middlesex University in London and the European School of Business (ESB) in Reutlingen, as well as an MBA from Ottawa University.

#### Thomas Mayrhofer

Thomas Mayrhofer is a lawyer and partner of Pinsent Masons LLP, an international law firm.

Thomas specializes in Stock Corporation & Capital Markets. He advises companies and entrepreneurs on IPOs, IBOs, capital market transactions, annual general meetings, takeovers and on all other aspects of stock corporation and capital markets law.

During his 25 years of professional experience he has been in charge of more than 50 Listings/ Initial public offerings, 30 Initial bond and convertible bond offerings, more than 300 public annual general meetings and 10 public takeovers.

## THE MYNARIC SHARE

We use various channels to communicate with our shareholders to keep you up to speed on the latest developments at Mynaric.

### NEWSLETTER

Our quarterly newsletter regularly carries both updates on activity at Mynaric as well as an overview of key developments in the aerospace networks market.

Sign up: <https://mynaric.com/news>

### BLOG

We blog often on various topics. Issues such as laser communication technology, the current state of connectivity in the world, the economics of the aerospace connectivity market – and numerous others – are all available on the Mynaric website or on the Medium blogging platform.

<https://mynaric.com/blog/>  
[https://medium.com/@comms\\_87201](https://medium.com/@comms_87201)

### SOCIAL MEDIA

And of course we maintain social media channels for the very latest from Mynaric:

Facebook: <https://www.facebook.com/mynaric>  
 Twitter: <https://twitter.com/mynaric>  
 LinkedIn: <https://www.linkedin.com/company/mynaric/>

### EVENTS

We will also be at the following investor events:

- Eigenkapitalforum, Frankfurt a.M.  
25-26 November 2019
- Münchener Kapitalmarkt Konferenz, Munich  
11 December 2019
- German Corporate Conference - Kepler Cheuvreux, Frankfurt a.M.  
20-22 January 2020

## Mynaric Browser Game

We are building the next generation of communication infrastructure here at Mynaric but wouldn't be able to do so without your continued support and investment. To convince you of how beautifully simple our business proposition is, you can experience building a high-altitude constellation yourself on our secret page.

<https://mynaric.com/secret>

As a valued shareholder we are pleased to grant you access to this page with the password 'constellations'.

With Mynaric, the future of connectivity is literally at your fingertips.



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## THE LAST SIX MONTHS

# Mynaric has – in the last six months – been a hive of activity as we metamorphosise from a project company into a product company and work towards becoming the leading manufacturer of cost-efficient laser communication products.

There are no areas of Mynaric that have not been operating at 100% to expedite this transformation.

In-house product development has seen us streamline processes and procedures with regard to suppliers, procurement, and production. Progress on the world's first commercially available, serially produced laser communication product for the airborne sector – the HAWK AIR – has progressed to the point that we are planning for the first saleable units to become available by the end of this year.

And the recent news of our contract to supply multiple units of our laser communication terminal for inter-satellite links is proof positive that we are producing the right products for the emerging market.

Product development towards manufacture has been assisted greatly by our new state-of-the-art premises which have permitted us to establish seamless integration of the processes feeding into serial manufacture.

Management changes in March saw both Bulent Altan and Hubertus von Janecek appointed to the Executive Board. The effect of these changes on the company was immediate. The repositioning of the company into a customer-facing product manufacturer is now in the hands of two men who know exactly how to successfully introduce a product range to a new market. Increased commercial interest and activity has seen a larger team of business development executives working in their own specific segments and establishing relationships with companies operating in new and existing application areas.

A great example of this is our increased visibility at aerospace conferences and international trade shows. We were overwhelmed by interest in us from the industry at the Paris Air Show. The trade fair – the largest and longest-running aerospace trade show in the world – saw us present



our product range for the first time to an invited international corporate audience and the response was incredible.

Proof of our impact on the market, and of the traction we are generating here at Mynaric, came in March when the lead investor of a satellite constellation we are working with invested EUR 11 million in us – a huge vote of confidence in both our products – importance to mega-constellations and of our strategy to establish ourselves as the ‘go to’, global leader in laser communication products for the aerospace market.

Activity has not been confined to Europe, however. We have recently announced a relocation of our US HQ to Los Angeles and set out expansion plans for the north American market. There are a number of larger constellation builders based in the United States who have announced that their current and future plans involve the incorporation of laser inter-satellite links and many of these are based on the Californian west coast which at the same time offers a big pool of talented aerospace professionals we want to tap as part of our US expansion.

To top off an exceptionally busy reporting period, we were recognized for our work on commercializing laser communication by the Edison Awards committee in April, winning Gold at the finals ceremony in New York City.

## THE NEXT SIX MONTHS

# The next six-months will be typified by continued, fevered activity in finalizing our initial product portfolio, producing first units, and signing product validation missions with lead customers to integrate and verify these products for large scale deployment.

As a result, we will spend the next months bringing all our completed product portfolio online. With our ARMADILLO and RHINO ground terminals for air and space applications, respectively, at product maturity and our CONDOR space product being prepared for launch into low Earth orbit from next year, we are in the throes of finalizing our HAWK AIR product to ensure that we have the highest specification laser terminals for all core segments: space, air and ground.

Given that we are on the final stretch of our product development we have in parallel already started to kick-off with production of the first batches of our airborne and space products. In fact, the number of space products we have in production schedule exceeds the total number of laser communication terminals launched into space by the aerospace industry to date. We plan to complete the first batches of production of both HAWK terminals in the next six months and we expect to ramp up our capacity further in 2020. In addition to our HAWK AIR terminal nearing completion, we are also on the cusp of a major announcement with regard to our product line. The HAWK SPACE is an adaptation of our airborne product particularly suited to some unique constellations in the market: more details of which will be announced soon.

With finalization of our unparalleled product line keeping our engineering and production departments busy, we will maintain our commercial energy levels and continue building relationships and seeking out new opportunities with the industry.

Greatly expanded sales and business development teams are now pursuing customers in all segments: generating traction in the widest range of applications for our full product line-up. Attendances at trade shows and international conferences have left us in little doubt that interest in Mynaric and our product range is sky high. Our forthcoming attendance at the Space Tech Expo in Bremen in November sees us again with a very strong presence at one of the largest aerospace trade shows in the world.

We will address the airborne market by inviting interested customers to our Bavarian headquarters and physically demonstrating our products in real-time so they can witness in person the technology and products' benefits.

Both in the airborne and space segments our main target now is on signing further product validation missions with customers to establish confidence in our products. Our customers will use these missions to learn how to integrate our products into their platforms, how to use them under real-world operational conditions, and, most importantly, to feel confident in the quality and capabilities of our products before moving to deploy them at scale.

Our recently announced first order for our space terminals, to be delivered as part of a product validation mission, is a blueprint of the kind of contracts we are currently bidding on.

As mentioned above, increased activity will not just occupy the European arm of Mynaric but also our subsidiary in Los Angeles. With the vast majority of the aerospace network connectivity market based in the United States and with the balance within the US tipping towards the west coast, we are confident that we are now in the right place, at the right time, with the right products.

Mynaric plans a major push to develop electronics and software designed and sourced solely from within the US in 2020. This is a key consideration for many US companies that are planning utilizing Mynaric's products in US governmental programs.

Several synergies are now driving Mynaric's progress: an expanding range of products, those products' readiness, increased commercial interest and activity, a ramping up of in-house production capabilities, and greater exposure within the industry.



# 3

## Market Insights

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## MARKET REVIEW

## There is no let-up in the frenetic rate of activity occurring in the aerospace connectivity market.

### January 2019

#### Google

Loon pairs with telecommunications provider Telkom Kenya to provide extended 4G/LTE coverage to rural and suburban areas of Kenya with lower population densities.

#### Iridium

Iridium's Certus broadband service goes 'live' and becomes the world's first truly global broadband service. A key feature of the Iridium system is its inter-satellite links, which use RF technology and support only low bandwidths but which create a system of signals travelling up to a satellite and then pass along from satellite to satellite without the need to make intermediate hops to ground stations.

### February 2019

#### Research

Space Angels research highlights how investors continue to fund space start-ups, with venture capitalists pouring \$3.25 billion into space technology companies in 2018, an increase of 29 percent.

#### SpaceX

It is revealed that SpaceX has filed the paperwork to begin building over 1,000,000 ground stations which will be required to relay data from its proposed Starlink constellation; a constellation that will eventually consist of 12,000 satellites.

#### Facebook

Facebook reveals it is working with Viasat to "accelerate the deployment of affordable, high-speed, high-quality internet to communities that lack reliable internet or have no connectivity at all", largely for communities in rural Mexico.

#### OneWeb

The first six satellites of the OneWeb constellation are launched from a spaceport in French Guiana.

### March 2019

#### SpaceX

Thinknum journalist Joshua Fruhlinger reports that SpaceX has been cranking up hiring for the team which is building Starlink. Fruhlinger states: "So is Starlink really going to happen? According to hiring data that we track at SpaceX, the answer is a resounding "Yes!"

### MARCH 2019

That's because SpaceX has begun hiring a team for Starlink, marking what appears to be the first time it's publicly mentioned Starlink in its job titles."

#### OneWeb

OneWeb announces that it has completed its non-debt financing which will allow the company to build its full satellite constellation. Space News reports that Japan-based SoftBank invested \$1 billion of the total \$1.2 billion, and has also become a strategic partner, with one of its directors, Ronald Fisher, joining OneWeb's board of directors.

### April 2019

#### Amazon

Amazon states that it is planning a constellation of thousands of satellites to deliver broadband internet connectivity. It is reported that Amazon requested the FCC permit spectrum rights for a constellation of 3,236 satellites for what is known as Project Kuiper.

#### Market

A major report from space and telecommunications research house Northern Sky Research (NSR) concludes that "more than 11,000 LCTs [laser communication terminals] are expected to be deployed cumulatively by 2028, generating nearly \$4 billion in revenues."

#### Google

SoftBank's HAPSMobile and Loon form a long-term strategic relationship to advance the use of high-altitude vehicles, such as balloons and unmanned aircraft systems (UAS), to bring connectivity to more people, places, and things worldwide. As part of the new relationship and HAPSMobile's financial and investment strategy, HAPSMobile invests US\$125 million in Loon. Loon obtains the right to invest the same amount in HAPSMobile in the future.

#### SpaceX

SpaceX is granted approval to launch more than 1,500 of its Starlink satellites at a lower altitude than originally planned. The ruling means SpaceX clears a major regulatory hurdle before the launch of the first batch of internet satellites from Cape Canaveral in May.

### MAY 2019

#### Telesat

Telesat states that it will receive proposals from Thales Alenia Space and Maxar Technologies on their final designs for satellites and interoperability with ground stations for its LEO constellation in the coming months. The final contract is expected to be in the region of \$3 billion.

## MARKET REVIEW

## MAY 2019

## SpaceX

Elon Musk, in a call with reporters, claims SpaceX sees 1,000 satellites as the point when Starlink becomes economically solid.

**“For the system to be economically viable, it’s really on the order of 1,000 satellites. If we are putting a lot more satellites than that in orbit, that’s a very good thing – it means there is a lot of demand for the system.”**

SpaceX, May 2019

## AeroVironment

In an LA Times report on AeroVironment and SoftBank’s development of the Hawk30 solar-powered drone, Tim Farrar of TMF Associates states:

**“The attraction of drones and balloons is they could cost much less than building cell towers in remote areas. And their location, closer to Earth than satellites, could offer faster response times.”**

AeroVironment, May 2019

## LeoSat

In an article the International Telecommunication Union, LeoSat’s Diederik Kelder states that “more data [has been] created in the past two years than in the entire history of the human race” and, as a result, ‘always on’ connectivity and smart data analysis and management require resilient and future-proof networks to deliver connectivity and services.”

## SpaceX

SpaceX reveals it has raised over \$1 billion in new capital in 2019 as it embarks on the deployment of its Starlink broadband constellation, according to regulatory filings.

## Loon

Loon announces that it has been in negotiations with Telefónica on a commercial contract that would utilize Loon’s balloons to extend mobile internet access to unserved and underserved areas of Peru, specifically remote parts of the Amazon region. Developments had accelerated to the point where Loon has begun installing infrastructure and intermittently testing with balloons serving LTE over the region.

## Amazon

Amazon Web Services announces general availability for its two new ground stations which will enable near-real time satellite communications for

## MAY 2019

operators. Its first two ground stations, located in Ohio and Oregon, are operational and can provide a host of increased capabilities, including near real-time interactions, for commercial and government customers.

## SpaceX

SpaceX sends the first of its internet-beaming satellites into space. SpaceX launches 60 satellites into low Earth orbit – the first batch of company’s Starlink mega-constellation which it hopes will help provide affordable internet coverage to the world.

## JUNE 2019

## World View

World View Enterprises reports that it has kept one of its high-altitude balloons afloat for 16 consecutive days before landing safely back on Earth. It’s the latest milestone on World View’s quest to keep a high-altitude balloon up for a full 60 days.

## Airbus

Airbus successfully completes a flight demonstration of a connected airborne battlespace scenario, centered on a MRTT aircraft. The test was carried out as part of the development of Airbus’ Network for the Sky (NFTS) program and follows from last August’s demonstration in Canada of secure mobile communications using a stratospheric balloon to simulate a High-Altitude Pseudo Satellite.

## SpaceX

GeekWire magazine reports that forty-five of SpaceX’s Starlink satellites have used their onboard krypton ion thrusters to reach their intended 550-kilometer (342-mile) altitude. It further reports that five satellites are in the process of raising their altitude from the 440-kilometer-high (273-mile-high) orbits into which they were launched, and five more are undergoing checkouts in preparation for raising their orbits.

## JULY 2019

## OneWeb

OneWeb announces the successful test of its six satellites in low Earth orbit. It reveals that all satellites delivered high-speed, low-latency services, with speeds of more than 400 Mbps.

Additionally, SoftBank Group Corp. announces a business agreement to advance OneWeb’s commercial services in preparation for OneWeb’s high speed, low latency global connectivity services.

## Loon

Alphabet’s Project Loon reaches the milestone of flying its balloons in the sky for a collective 1 million hours.

## MARKET REVIEW

### JULY 2019

#### TeleSat

The Canadian government commits to invest up to 1.2 billion Canadian dollars (\$919 million) in Telesat Canada's LEO system over 10 years pending the system's demonstration of expected capacity and performance.

#### Amazon

Morgan Stanley analyst Adam Jonas is quoted on Amazon's plan for a low Earth orbit satellite constellation and states he believes the value of the space economy will skyrocket from US\$350 billion to more than US\$1.1 trillion by 2040, led by the growing need for space-based telecommunications networks. Increasing global internet connectivity will result in greater adoption of e-commerce which will result in more consumers joining Amazon's ecosystem, according to Jonas.

### AUGUST 2019

#### Facebook

SoftBank subsidiary HAPSMobile joins Facebook's High-Altitude Platform Station (HAPS) flight demonstration program in South Africa. It aims to leverage HAPS systems to build stable internet connectivity environments at locations such as mountainous terrain, remote islands and developing countries not served by the telecommunication networks.

### SEPTEMBER 2019

#### OneWeb

OneWeb announces its satellites will deliver 375 Gbps of capacity to every country above the 60th parallel North. The company claims that in 2020 millions across the Arctic will be connected, many for the first time, giving hundreds of thousands of homes, planes, and boats high-speed and low-latency connectivity.

#### SpaceX

SpaceX president Gwynne Shotwell, speaking at World Satellite Week in Paris, announces that SpaceX will look to launch 24 Starlink missions in 2020 as it builds out its constellation which could, eventually, reach just under 12,000 satellites.

#### Market

NSR reports on projections that Earth Observation satellite data and services will represent a \$56 billion cumulative revenue opportunity over the next ten years, growing to \$7.2 billion annually in 2028. The demand for more data and insights will be driven by upcoming constellations, high-volume data pipelines, and subscriptions for insight services, according to the satellite market research experts.

### SEPTEMBER 2019

#### SpaceX

SpaceX announces that it plans to change its satellite launch strategy in a way that will speed up deployment of its Starlink broadband service. This will help the company achieve a new goal of providing broadband in the Southern United States late next year.

### OCTOBER 2019

#### SpaceX

It is reported that SpaceX has filed with the FCC a request for approval of an additional 30,000 satellites for its Starlink constellation. If approved, it would mean a full constellation of 42,000 satellites. The LA Times reports that the global internet connectivity market is worth about \$1 trillion with SpaceX chief Elon Musk estimating that the company's Starlink satellite constellation could capture at least 3%, or \$30 billion, of that sector.

## MARKET FORECAST

## “Test results from recent low Earth orbit internet satellite launches are starting to come in – and they're impressive.”

Network World, September 2019

Without doubt, continuing work and progress on communication constellations will drive the market in the next few months. A cursory glance at launchers' manifests for the next six months reveal hundreds of communication satellites destined for low Earth orbit waiting to be sent up into fledgling constellations.

We have stated before that we believe one of – if not ‘the’ – biggest space companies in the world will spearhead this drive and we similarly believe that nothing will change this in the next 6-12 month period. SpaceX will launch 24 missions to populate Starlink towards the end of 2019 and in 2020: a total of 1,400 satellites. The company has stated that it will start making the Starlink constellation ‘economically’ viable" when 1,000 satellites are in orbit – given their timetable that means by this time next year.

But SpaceX is not the only first mover here: OneWeb will use 2020 to bolster its constellation. It already has its first half dozen satellites in orbit and will launch 64 satellites in December 2019 and early-2020 as it builds out.

OneWeb is also investing \$80 million in a dedicated satellite manufacturing facility in Florida which, it states, will produce two satellites a day when fully operational. A clear statement of intent from the company that wants to establish a 900-strong satellite constellation.

And OneWeb is not the only constellation-builder that sees the benefits of in-house serial manufacture. Telesat stated in May of this year that it wants a factory capable of building 20 to 25 large LEO satellites a month so that it can operate monthly launches.

**“Laser communications will be key for the future.”**

Airbus Defense and Space, September 2019

Space investment specialists Space Angels have very recently reported on what they call the ‘Dawn of the Entrepreneurial Space Age’ and revealed that with \$2.1 billion invested into space companies in the third quarter of 2019, total funding for the year has reached \$5.0 billion.

This puts 2019 on track to be the largest year on record for space investment and, cumulatively, reveals that \$24.6 billion has now been invested into 509 unique space companies since 2009.

HAPS developments are also contributing towards making the stratosphere an equally promising and important segment within the aerospace connectivity market. The big battle playing out in the next 6-12 months will be Airbus type aircraft such as the Zephyr versus airships like Thales' Strato-bus. Facebook is also pursuing a “dual-kite aerial vehicle” to sit in the upper atmosphere and operate at two different altitudes.

The Softbank-backed HAPSMobile has announced in the last few weeks that its HAWK30 Solar HAPS has successfully completed its first test flight and will use the coming months to “[move] forward with tests in the stratosphere and long flight duration tests lasting several months”.

Given the investments being made by well-funded ventures in various platforms operating in the upper atmosphere, it is becoming clear that the stratosphere will increasingly become a very important segment.

Quantum Key Distribution is steadily moving up the space agenda. Several companies and consortia of organisations are now actively undertaking work on demonstrations to establish a quantum communication infrastructure from low Earth orbit to the ground. Quantum computers will yield processing power that will likely make existing encryption algorithms obsolete so the need for an unhackable internet for various key industries that need to transmit critical data is becoming pressingly essential.

Earth Observation is also driving growth in the sector. Northern Sky Research predicts that the demand for more data and insights will be driven by upcoming constellations and high-volume data pipelines, and subscriptions for insight services. Proof of activity in this key field can be seen in hyperspectral imaging companies Orbital Sidekick and Hypersat both launching initial satellites of their constellations in 2020.

# 4

## H1 2019 Consolidated Financial Statements

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**PROFIT AND LOSS STATEMENT  
FOR THE PERIOD FROM 01 JANUARY TO 30 JUNE 2019**

in EUR	01.01. - 30.06.2019	01.01. - 30.06.2018
Sales	207,023.56	1,219,417.56
Decrease or increase of work in progress	259,509.31	-257,772.81
Other own work capitalized	2,135,549.02	1,774,197.43
Other operating income	281,526.86	58,330.74
Material expenses		
a. Expenses for raw materials, consumables and supplies and for purchased goods	-180,960.49	-449,170.91
b. Expenses for services procured	-416,462.68	-506,296.10
	-597,423.17	-955,467.01
Personnel expenses		
a. Wages and salaries	-3,223,146.41	-2,774,194.39
b. Social security contributions and expenses for pensions and support	-555,198.85	-527,056.35
	-3,778,345.26	-3,301,250.74
Amortisation of intangible fixed assets and depreciation of property, plant and equipment	-400,805.44	-249,471.50
Other operating expenses	-1,900,301.07	-1,953,937.75
Other interest and similar income	15,010.17	2,132.07
Interest and other expenses	-307.06	0.00
Income taxes	-3,958.92	-0.91
<b>Consolidated net loss after tax</b>	<b>-3,782,522.00</b>	<b>-3,663,822.92</b>
Other taxes	-665.09	0.00
<b>Consolidated net loss for the period</b>	<b>-3,783,187.09</b>	<b>-3,663,822.92</b>
Losses carried forward from the previous year	-16,718,350.01	-10,062,147.79
<b>RETAINED LOSS</b>	<b>-20,501,537.10</b>	<b>-13,725,970.71</b>

**BALANCE SHEET**

<b>ASSETS</b>		
in EUR	30.06.2019	31.12.2018
<b>A. Fixed assets</b>		
<b>I. Intangible assets</b>		
1. Internally generated commercial property rights as well as similar rights and values	7,097,280.42	5,014,441.33
2. Purchased Licenses, commercial property rights as well as similar rights and values	95,397.00	115,327.00
	7,192,677.42	5,129,768.33
<b>II. Property, plant and equipment</b>		
1. Land, buildings on third-party land	1,069,225.00	0.00
2. Technical equipment and machinery	728,371.00	748,260.00
3. Other equipment, operating and business equipment	407,531.00	356,591.00
4. Advance payments	562,750.00	1,346,129.19
	2,767,877.00	2,450,980.19
	9,960,554.42	7,580,748.52
<b>B. Current assets</b>		
<b>I. Inventories</b>		
1. Raw materials, consumable and supplies	215,132.19	23,086.42
2. Work in progress, unfinished services	2,262,812.86	2,003,303.55
3. Advance payments	436,704.32	362,383.60
	2,914,649.37	2,388,773.57
<b>II. Receivables and other assets</b>		
1. Trade receivables	302,920.91	317,101.84
2. Other assets	448,430.39	445,011.88
	751,351.30	762,113.72
<b>III. Cash and hand bank balances</b>	18,514,967.39	15,236,139.20
	22,180,968.06	18,387,026.49
<b>C. Deferred expenses</b>	170,695.39	75,682.36
<b>TOTAL ASSETS</b>	<b>32,312,217.87</b>	<b>26,043,457.37</b>

**BALANCE SHEET**

<b>LIABILITIES</b>		
in EUR	30.06.2019	31.12.2018
<b>A. Equity</b>		
<b>I. Subscribed capital</b>	2,904,304.00	2,704,304.00
<b>II. Capital reserve</b>	48,141,265.53	37,341,265.53
<b>III. Equity difference from currency conversion</b>	-32,455.03	-9,829.46
<b>IV. Retained loss</b>	-20,501,537.10	-16,718,350.01
	30,511,577.40	23,317,390.06
<b>A. Accruals</b>		
Other accruals	1,306,024.69	1,309,887.22
<b>C. Liabilities</b>		
1. Trade payables	313,944.33	1,270,284.91
2. Other liabilities	180,671.45	145,895.18
	494,615.78	1,416,180.09
<b>TOTAL LIABILITIES</b>	<b>32,312,217.87</b>	<b>26,043,457.37</b>



## DEVELOPMENT OF EQUITY FOR THE PERIOD FROM 01 JANUARY TO 30 JUNE 2019

in EUR	Subscribed capital	Capital reserves	Retained loss	Exchange rate differences	Total
As of 01 January 2019	2,704,304.00	37,341,265.53	-16,718,350.01	-9,829.46	23,317,390.06
Capital increase March 2019	200,000.00	10,800,000.00			11,000,000.00
Differences from currency conversion				-22,625.57	-22,625.57
Consolidated net loss			-3,783,187.09		-3,783,187.09
As of 30 June 2019	2,904,304.00	48,141,265.53	-20,501,537.10	-32,455.03	30,511,577.40

## DEVELOPMENT OF FIXED ASSETS FOR THE PERIOD FROM 01 JANUARY TO 30 JUNE 2019

in EUR	Cost					Depreciation				Net book value	
	As of 01.01.2019	Additions	Reclassification	Disposals	As of 30.06.2019	As of 01.01.2019	Additions	Disposals	As of 30.06.2019	As of 31.12.2018	As of 30.06.2019
<b>I. Intangible assets</b>											
1. Internally generated commercial property rights as well as similar values	5,014,441.33	2,135,991.93	0.00	0.00	7,150,433.26	0.00	53,152.84	0.00	53,152.84	5,014,441.33	7,097,280.42
2. Purchased licenses, commercial property rights as well as similar rights and values	275,658.86	0.00	0.00	0.00	275,658.86	160,331.86	19,930.00	0.00	180,261.86	115,327.00	95,397.00
2. Goodwill	0.00	3,500.00	0.00	0.00	3,500.00	0.00	3,500.00	0.00	3,500.00	0.00	0.00
	5,290,100.19	2,139,491.93	0.00	0.00	7,429,592.12	160,331.86	76,582.84	0.00	236,914.70	5,129,768.33	7,192,677.42
<b>II. Property, plant and equipment</b>											
1. Land, buildings on third-party land	0.00	16,799.07	1,070,805.43	0.00	1,087,604.50	0.00	18,379.50	0.00	18,379.50	0.00	1,069,225.00
2. Technical equipment and machinery	1,051,651.58	3,104.27	39,280.00	0.00	1,094,035.85	303,391.58	62,273.27	0.00	365,664.85	748,260.00	728,371.00
3. Other equipment, operating and office equipment	476,893.03	118,076.78	-17,719.00	0.00	577,250.81	120,302.03	55,219.83	-5,802.05	169,719.81	356,591.00	407,531.00
4. Advance payments	1,346,129.19	497,337.24	-1,092,366.43	0.00	751,100.00	0.00	188,350.00	0.00	188,350.00	1,346,129.19	562,750.00
	2,874,673.80	635,317.36	0.00	0.00	3,509,991.16	423,693.61	324,222.60	-5,802.05	742,114.16	2,450,980.19	2,767,877.00
<b>TOTAL FIXED ASSETS</b>	<b>8,164,773.99</b>	<b>2,774,809.29</b>	<b>0.00</b>	<b>0.00</b>	<b>10,939,583.28</b>	<b>584,025.47</b>	<b>400,805.44</b>	<b>-5,802.05</b>	<b>979,028.86</b>	<b>7,580,748.52</b>	<b>9,960,554.42</b>

## CASH FLOW STATEMENT FOR THE PERIOD FROM 01 JANUARY TO 30 JUNE 2019

in EUR	01.01. - 30.06.2019
<b>Period result</b>	<b>-3,783,187.09</b>
+ Amortisation or depreciation of fixed assets	400,805.44
+/- Increase / decrease of accruals	-3,862.53
+/- Other non-cash expenses / income	-140,283.56
-/+ Increase / decrease in inventories, trade receivables and other assets not attributable to investing or finance activities	-610,126.41
+/- Increase / decrease in trade payables and other liabilities not attributable to investing or finance activities	-921,564.31
-/+ Profit or loss on the disposal of fixed assets	-5,802.05
+/- Interest expenses / interest income	-14,703.11
+/- Income tax expense / income	3,958.92
-/+ Income tax payments	-3,958.92
<b>Cash flow from operating activities</b>	<b>-5,078,723.62</b>
- Payments for investments in intangible fixed assets	-2,139,491.93
- Payments for investments in property, plant and equipment	-635,317.36
+ Interest received	15,010.17
<b>Cash flow from investing activities</b>	<b>-2,759,799.12</b>
Equity contributions from shareholders of the parent company	11,000,000.00
Grants received	140,283.56
- Interest paid	-307.06
<b>Cash flow from financing activities</b>	<b>11,139,976.50</b>
<b>Exchange rate differences</b>	<b>-41,791.74</b>
<b>Change in cash and cash equivalents</b>	<b>3,259,662.02</b>
+/- Exchange rate and valuation-related changes in cash and cash equivalents	19,166.17
+ Cashfunds at the beginning of the period	15,236,139.20
<b>CASHFUNDS AT THE END OF THE PERIOD</b>	<b>18,514,967.39</b>

## REPORT OF THE INDEPENDENT AUDITOR

Mynaric AG, Gilching

We have conducted a review of the semi-annual consolidated financial statements of Mynaric AG, Gilching, for the period from 1 January to 30 June 2019 – consisting of the consolidated balance sheet as of 30 June 2019, the consolidated profit and loss statement, the consolidated statement of changes in shareholders' equity and the consolidated cash flow statement for the period from 1 January to 30 June 2019, as well as the notes to the consolidated semi-annual financial statements. The preparation of the semi-annual financial statements in line with the provisions of German commercial law remains the responsibility of the Company's legal representatives. Our responsibility is to issue a report pertaining to the semi-annual consolidated financial statements based on our review.

We conducted our review of the semi-annual consolidated financial statements in accordance with the Generally Accepted Standards governing the review of financial statements in Germany as promulgated by the Institute of Auditors (Institut der Wirtschaftsprüfer (IDW)). In accordance herewith, the review must be planned and performed in such a way that we are able, with a moderate level of assurance, to rule out the possibility that the semi-annual consolidated financial statements in material respect have not been prepared, in accordance with German commercial law or, that they, in compliance with the principles of proper accounting, do not give a true and fair view of the net assets, financial position and results of operations of the Company. A review is limited primarily to inquiries of Company personnel and analytical procedures applied to financial data and this provides less assurance than an audit. We have not performed an audit and, accordingly, we do not express an audit opinion.

Based on our review, nothing has come to our attention that causes us to believe that the semi-annual consolidated financial statements have not been prepared in accordance with German commercial law or, in compliance with the principles of proper accounting, do not give a true and fair view of the net assets, financial position and results of operations of the Company.

Munich, 02 August 2019

**RSM GmbH**  
Auditing firm  
Tax advisory firm

Zelger  
Auditor

Schön  
Auditor

## NOTES TO THE SEMI-ANNUAL CONSOLIDATED FINANCIAL STATEMENT FOR THE PERIOD FROM 01 JANUARY TO 30 JUNE 2019

### GENERAL INFORMATION

Mynaric AG is the parent company of the Mynaric Group. Its headquarters are located in Gilching and it is registered in the Commercial Register at the District Court of Munich (reg. no. HRB 232763).

The Company's shares are listed on the Open Market (Segment Scale) of the Frankfurt Stock Exchange. As at the balance sheet date, Mynaric AG is not considered a public company within the meaning of Section 264d German Commercial Code (HGB).

Mynaric AG prepares these semi-annual consolidated financial statements on a voluntary basis; the size criteria governing the Company's obligation to prepare said statements in accordance with Section 293 German Commercial Code (HGB) were not exceeded as at the balance sheet date nor on the previous balance sheet date.

The semi-annual consolidated financial statements have been prepared in accordance with Sections 290 et seq. German Commercial Code (HGB) and the relevant provisions of the German Stock Corporation Act (AktG).

The profit and loss account was prepared using the total cost accounting method (Section 298, paragraph 1) in conjunction with Section 275, paragraph 2 German Commercial Code (HGB).

The figures from the previous year's balance sheet as at 31 December 2018 were used for comparative purposes. The comparative period for the profit and loss statement was 1 January to 30 June 2018.

As the parent company of the Mynaric Group, Mynaric AG holds all shares in Mynaric Lasercom GmbH, Gilching, Mynaric Systems GmbH, Gilching – which was acquired as a non-operating company on 15.03.2019 – as well as Mynaric USA, Inc., Huntsville, USA. These subsidiaries render research and development services as well as services within the field of laser communication technology. Mynaric Lasercom GmbH began, in the financial year 2018, with the establishment of a series production line for laser communication products. Mynaric AG finances the business activities of its subsidiaries and their development through payments into equity and the provision of shareholder loans. Furthermore, Mynaric AG provides a host of central services such as Human Resources, IT, Accounting, Controlling and Marketing.

In line with the business plans of the Mynaric Group, proceeds from product sales will increase significantly over the next few years and, ultimately, cash flows from operating activities will be generated. Cash and cash equivalents as at the balance sheet date were sufficient to cover financial needs that will arise in the meantime.

### BASIS OF CONSOLIDATION

The following domestic and foreign subsidiaries, which are directly controlled by Mynaric AG, have been included in the semi-annual financial statements:

SUBSIDIARY COMPANY	SHARE IN CAPITAL (PERCENT)	EQUITY OF THE SUBSIDIARY 30.06.2019* TEUR	SEMI-ANNUAL RESULT 30.06.2019* TEUR
Mynaric Lasercom GmbH, Gilching (Germany)	100	5,959	-2,512
Mynaric Systems GmbH, Gilching (Germany)	100	-175	-200
Mynaric USA, Inc., Huntsville (USA)	100	-2,581**	-446***

\* Disclosures in line with the German Commercial Code (HGB) or local accounting regulations.

\*\* Stated at the average exchange rate on 30.06.2019.

\*\*\* Stated at the average exchange rate for the period 01.01.2019 to 30.06.2019.

The financial year of all companies included in the consolidated financial statements ends on 31 December. This set of semi-annual financial statements were prepared as of 30 June 2019. Semi-annual financial statements have been prepared for the consolidated subsidiaries.

### PRINCIPLES OF CONSOLIDATION

**Equity consolidation** is based on the revaluation method pursuant to Section 301 (1) German Commercial Code (HGB). Within the scope of the equity consolidation of fully consolidated subsidiaries, the fair value of the assets less any liabilities at the time of acquisition is viewed against the carrying amount of the shareholding. Any remaining positive difference would be presented as goodwill and amortised on a straight-line basis over its expected useful life, including as needed on an unscheduled basis. The consolidated financial statements were prepared for the first time for the financial year 2017. The valuation of assets and liabilities attributable to the subsidiaries, which are used for the calculation of equity offsetting, are those valuations at the time of the initial consolidation of the subsidiaries.

**Debt consolidation** is realised in line with Section 303 paragraph 1 German Commercial Code (HGB) through the elimination of all loans, receivables, provisions and liabilities between the companies included in the consolidated financial statements.

Assets to be included in the consolidated financial statements that are based (either in whole or in part) on deliveries between those companies included in the consolidated financial statements are recognised in the consolidated financial statements at their cost of acquisition or production (**elimination of intercompany profits**).

Pursuant to Section 305 paragraph 1 German Commercial Code (HGB), the **consolidation of expenses and revenues** is realised by the offsetting of revenues between the Group companies with those expenses also attributable to them, to the extent that these are not to be disclosed as an increase in finished goods and work in progress, or as other capitalised own work. Interest income and similar income is offset with the corresponding expenses.

**Deferred taxes** are accounted for those differences between the carrying amounts in the commercial and tax accounts, which are attributable to equity, debt, expense and revenues consolidation as well as the elimination of inter-company profits, to the extent that their effects are expected to reverse in the years that follow. Deferred taxes are calculated on the basis of a rate of income tax of 28%.

## NOTES TO THE SEMI-ANNUAL CONSOLIDATED FINANCIAL STATEMENT FOR THE PERIOD FROM 01 JANUARY TO 30 JUNE 2019

### UNDERLYING PRINCIPLES OF CURRENCY CONVERSION

#### Conversion of items denominated in a foreign currency in the annual financial statements

To the extent that individual financial statements include items based on amounts denominated in foreign currencies (or otherwise originally denominated in a foreign currency), their conversion into EURO was made on the basis of the exchange rate at the time of the transaction. Items included in the balance sheet are translated at the average spot rate on the reporting date. In the event of a residual term in excess of one year, unrealised exchange gains are not taken into account.

#### Conversion of financial statements into a foreign currency

Individual financial statements denoted in foreign currencies are converted using the "modified balance sheet date method". The balance sheet items – with the exception of equity – are converted at the average spot exchange rate on the balance sheet date, while equity is converted at historical rates. The items in the profit and loss statement are converted at the average exchange rate for the accounting period in question. Any resulting difference from a currency conversion is recognised separately in equity as profit-neutral.

### ACCOUNTING AND VALUATION PRINCIPLES

The semi-annual financial statements of those companies included in the semi-annual consolidated financial statements have been prepared in accordance with uniform accounting and valuation methods.

The following presents the accounting policies applied in the semi-annual consolidated financial statements. The consolidation methods employed as well as the accounting and valuation principles used have been consistently applied vis-a-vis the comparative figures for the same period of the previous year.

During the preparation of the semi-annual financial statements, all valuations are based on a going concern accounting.

**Intangible assets as well as property, plant and equipment** are valued at acquisition or production cost less scheduled (and where necessary unscheduled) amortisation a depreciation. In accordance with Section 248 paragraph 2 in conjunction with Section 255 paragraph 2 a German Commercial Code (HGB), the Group has utilised its elective option and accounted for internally generated intangible assets. Costs associated with internally generated intangible fixed assets include the expenses incurred for their development.

Depreciation is charged on a straight-line basis over the useful life of the asset. The additions in the financial year were depreciated on a pro rata basis for the full month of acquisition and for the following months.

Costs associated with development projects are amortised from the point in time at which the respective projects are completed, or at the earlier time of use.

Assets with acquisition cost of up to EUR 250 are recognised in full in the year of acquisition as an expense under other operating expenses. Assets with acquisition cost of between EUR 250 and EUR 800 are depreciated as low-value assets in the year of acquisition. Fixed values have also been established for tools, laboratory & testing equipment and work clothing under fixed assets.

**Raw materials, consumables and supplies** are valued at acquisition cost. The lower of cost or market principle has been observed.

**Work in progress** is accounted at the lower of cost or fair value. Costs include the direct costs of materials and material overheads, the direct costs of production and production overheads, as well as the depreciation of fixed assets and an appropriate proportion of administrative expenses. Costs do not comprise interest on debt.

**Trade receivables and other assets** are accounted at the lower of cost or fair value. Discounting was not necessary.

**The cash balance and balances held at banks** are valued at face value.

**Prepaid expenses** include expenses prior to the reporting date, which represent expenses for the period subsequent to the balance sheet date.

**Accruals** take into account all identifiable risks and contingent liabilities. These are recognised at the settlement amount based on reasonable commercial judgement.

**Liabilities** are recognised in line with the maximum value principle. The valuation is set at the settlement amount.

**Deferred taxes** have been accounted on the basis of the temporary concept. In accordance herewith, a deferred tax liability has been accounted in the financial statements of the consolidated companies if there are differences between the value of assets, liabilities and deferred income expense in those financial statements and their respective tax values, which are expected to decrease in the future, thus resulting in a tax burden. If a tax relief results from the difference in the respective values, a deferred tax assets up to the amount of a deferred tax liability stemming from other valuation differences is recognized. Any excess of a deferred tax asset over a deferred tax liability has not been capitalised.

### EXPLANATORY NOTES TO THE CONSOLIDATED BALANCE SHEET

**Intangible fixed assets** comprise EUR 7,097 thousand (comparative value as at 31 December 2018 EUR 5,014 thousand) costs of development projects. These primarily consist of costs associated with the Satellite Terminal amounting to EUR 4,895 thousand (comparative value as at 31 December 2018 EUR 3,663 thousand) as well as costs for the Air Terminals in the amount of EUR 1,800 thousand (comparative value as at 31 December 2018 EUR 918 thousand). Amortisation of development costs was recognised in the financial year for a completed ground station type. During the first half of 2019, the total R&D costs amounted to EUR 3,360 thousand; thereof EUR 2,136 thousand related to internally generated intangible fixed assets.

**Property, plant and equipment** essentially comprise land rights and buildings amounting to EUR 1,069 thousand (comparative value as at 31 December 2018 EUR 0) resulting from the additions and conversions to the newly rented building. Furthermore, technical equipment and machinery amounting to EUR 728 thousand (comparative value as at 31 December 2018 EUR 748 thousand) as well as operating and office equipment amounting to EUR 408 thousand (previous year: EUR 357 thousand) have been included. Advance payments and unfinished goods amounting to EUR 563 thousand (comparative value as at 31 December 2018 EUR 1,346 thousand) predominantly relate to technical equipment used to expand manufacturing operations.

**Unfinished goods** primarily comprise the optical ground stations currently under production with a value of EUR 1,843 thousand (comparative value as at 31 December 2018 EUR 1,620 thousand).

**All trade receivables** have residual terms of up to one year.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENT FOR THE FINANCIAL YEAR FROM 01 JANUARY TO 31 DECEMBER 2018

The vast majority of **other assets** consists of security deposits for rent guarantees amounting to EUR 296 thousand (comparative value as at 31 December 2018 EUR 106 thousand) as well as value added tax receivables in the amount of EUR 98 thousand (comparative value as at 31 December 2018 EUR 280 thousand). Items with residual terms in excess of one year amount to EUR 296 thousand (comparative value as at 31 December 2018 EUR 106 thousand).

**Cash and cash equivalents** amounting to EUR 18,515 thousand (comparative value as at 31 December 2018 EUR 15,236 thousand) consist of cash and credit balances with banks.

As at 01.01.2019, the Company's **share capital** amounted to EUR 2,704,304 divided into 2,704,304 bearer shares with a nominal value of EUR 1 each. By way of resolution by the Executive Board and the Supervisory Board dated 18.03.2019, Company's share capital was increased by way of the partial utilisation of Authorised Capital 2017/I, from EUR 2,704,304.00 by an additional EUR 200,000.00, bringing it to EUR 2,904,304.00 against cash contributions through the issuance of 200,000 new no-par-value bearer shares with a pro rata share in the Company's share capital of EUR 1.00 per share.

As at 30.06.2019, the Company's **capital reserve** stood at EUR 48,141,265.53. The change to 01.01.2019 with a level of EUR 37,341,265.53 results from the paid in share premium amounting to EUR 10,800,000.00 as part of the increase of the share capital resolved at 18.03.2019. In addition the capital reserve includes – with an amount standing at EUR 5,647 thousand (previous year: EUR 5,647 thousand) – a passive difference from equity consolidation which resulted from the contribution of the shares in Mynaric Lasercom GmbH to Mynaric AG in 2017.

**Other accruals** include, in particular, accruals relating to personnel of EUR 824 thousand (comparative value as at 31 December 2018 EUR 816 thousand), legal disputes of EUR 253 thousand (comparative value as at 31 December 2018 EUR 245 thousand), financial reporting and auditing costs of EUR 71 thousand (comparative value as at 31 December 2018 EUR 69 thousand), remuneration of the Supervisory Board of EUR 49 thousand (comparative value as at 31 December 2018 EUR 35 thousand), warranty of EUR 22 thousand (comparative value as at 31 December 2018 EUR 22 thousand) and other items of EUR 87 thousand (comparative value as at 31 December 2018 EUR 123 thousand). A warranty accrual has been provided for legal and factual obligations vis-a-vis customers.

**Trade payables** standing at EUR 314 thousand (comparative value as at 31 December 2018 EUR 1,270 thousand) have a residual term of up to one year. As at 31 December 2018, trade payables contain of EUR 697 thousand relating to investments in the rented new office and operating building.

**Other liabilities** are due within one year after the balance sheet date. Other liabilities primarily include tax liabilities in the amount of EUR 128 thousand (comparative value as at 31 December 2018 EUR 103 thousand) and social security liabilities in the amount of EUR 27 thousand (comparative value as at 31 December 2018 EUR 21 thousand).

Deferred tax assets were taken into account up to the amount of deferred tax liabilities. Deferred tax liabilities result from the capitalisation of internally generated intangible assets. Deferred tax assets result from the tax loss carry forwards. Due to the netting of these balance sheet items, these have not been reported and have no impact on equity. The calculation was based on an average tax rate of 28%.

### NOTES TO THE CONSOLIDATED PROFIT AND LOSS STATEMENT

**Revenues** include investment grants from subsidised projects in the amount of EUR 140 thousand (comparative value as at 30 June 2018 EUR 186 thousand).

Other capitalised own work in the first half of 2019 of EUR 2,136 thousand primarily includes those production costs for the development projects "Satellite Terminals" in the amount of EUR 1,233 thousand and "Air Terminals" in the amount of EUR 882 thousand.

**Other operating income** include currency exchange gains amounting to EUR 37 thousand (comparative value as at 30 June 2018 EUR 55 thousand).

**Other operating expenses** for the reporting period are as follows:

OTHER OPERATING EXPENSES	TEUR	
	01.01. - 30.06.2019	01.01.2018 - 30.06.2018
Administrative expenses	920	738
Operating expenses	462	590
Sales expenses	235	572
Other	283	54
<b>TOTAL</b>	<b>1,900</b>	<b>1,954</b>

The item "Administrative expenses" comprises those operating expenses attributable to insurance, maintenance, communications, training, consultants, legal services and notaries. Operating expenses are understood as all those expenses deemed necessary for the maintenance of business activities, primarily rental and ancillary costs as well as IT costs and freight. Sales expenses include marketing expenses and travel expenses.

Other operating expenses include currency exchange losses amounting to EUR 9 thousand (comparative value as at 30 June 2018 EUR 1 thousand).

### OTHER INFORMATION

#### Other financial obligations

Other financial obligations amount to EUR 9,522 thousand; thereof EUR 660 thousand are attributable to the second half of 2019. A significant component thereof relates to a ten-year lease for the period up to April 2029 in the amount of EUR 8,760 thousand

#### Employees

During the first half of 2019, Mynaric Group employed an average of 78 employees, consisting of 18 employees with Mynaric AG, 52 employees with Mynaric Lasercom GmbH, 2 employees with Mynaric Systems GmbH and 6 employees with Mynaric USA Inc. Executive Board members and Managing Directors have not been included in the number of employees.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENT FOR THE FINANCIAL YEAR FROM 01 JANUARY TO 31 DECEMBER 2018

### Executive bodies

In the first half of 2019, the Executive Board of Mynaric AG consisted of the following members:

- Dr. Wolfram Peschko (Dr. rer. nat.), Executive Board for Finance & Administration, Gauting
- Bulent Altan (Master of Science in Aerospace), Executive Board for Space & Systems, Playa Vista, California (from 13.03.2019)
- Hubertus Edler von Janecek (Dipl.-Ing.), Executive Board for Airborne & Operations, Munich (from 13.03.2019)
- Dr. Markus Knapek (Dr.-Ing.), Munich (until 13.03.2019)
- Joachim Horwath (Dipl.-Ing.), Gilching (until 13.03.2019)

In the first half of 2019, the Supervisory Board consisted of the following members:

- Dr. Manfred Krischke, Chairman, CEO Cloudeo AG
- Dr. Gerd Gruppe, Deputy Chairman, retired Executive Board for Space Management DLR
- Dr. Thomas Billeter, Investor and Business Angel
- Mr. Müller-Brühl, COO GreenCom Networks AG
- Mr. Thomas Mayrhofer, Lawyer and Partner with the Law Firm Pinsent Masons Germany LLP (from 01.04.2019)

### Total remuneration of the executive bodies

The disclosure of the total remuneration of the Executive Board has been waived in accordance with Section 314 paragraph 3 sentence 2 in conjunction with Section 286 paragraph 4 German Commercial Code (HGB).

The total remuneration of the Supervisory Board amounted to EUR 30 thousand during the first half of the year.

### Fees paid to the auditors of the consolidated financial statements

The fees paid to the auditors of the consolidated financial statements for the first half of 2019 stood at EUR 7 thousand and exclusively concerned review services.

### Subsequent reporting

There were no events of particular significance that occurred after 30 June 2019.

Gilching, 02 August 2019

### The Executive Board

Dr. Wolfram Peschko

Bulent Altan

Hubertus Edler von Janecek

## RESPONSIBILITY STATEMENT MYNARIC AG

We confirm that to the best of our knowledge the reporting in the consolidated financial statements of the Mynaric group for the period from January 1 through June 30, 2019 provides, in accordance with the applicable accounting principles, a true and fair view of the results of operations, financial position, and net assets and that the course of business including the business result and the situation of the company are presented in such a way as to convey a true and fair view and that the significant opportunities and risks of the expected development of the Group are described.

Gilching, 02 August 2019

### The Management Board



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