



# 2018 | ANNUAL REPORT

**mynaric**

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# Laser communication

The cornerstone of future connectivity solutions



## A new approach to telecom networks

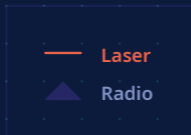
Currently the only way to increase network capacity and keep devices data-connected is to lay fiber optic cables. However, this is hugely expensive and, in practice, often logistically difficult. So why not beam it down from the skies or space? It makes life so much easier and cheaper.

Our laser terminals can be placed on satellites, or drones – or even the plane you take to go on holiday – and send data to each other. Lots of data over really long distances.

And it is not just between two aircraft or two drones or two satellites but numerous. Hundreds, even thousands. This creates a network of flying objects all linked by laser communication and capable of delivering broadband internet to any place on earth no matter how remote. And it does all this without the need for optical fibers in the ground.

# Tomorrow's Telecommunication Landscape

A glimpse into the future of omnipresent connectivity



### Earth Observation Satellites

Currently only 70% of information collected by Earth Observation satellites makes it back to Earth for interpretation. Laser communication solves this bottle-neck and allows for all information collected to be transmitted back to the ground.

### Commercial Aircraft Networks

Airplane constellations are laser-linked networks of airplanes which provide lightning fast in-flight WiFi connectivity and real-time aircraft data to help both cockpit and ground maintenance teams.

### High Altitude Networks

Airborne platforms, such as balloons or unmanned aerial vehicles (UAVs), in high altitude above commercial air traffic are interconnected using high-speed laser communication links to form flying networks. These are then linked to the existing terrestrial network through high-speed air-to-ground connections.

### Continuous Surveillance

Drones, balloons and airplanes continuously generate enormous amounts of data for government agencies, commercial applications and for scientific purposes. Laser communication allows downstreaming of such data securely in real time for research and interpretation.

### Satellite Telecom Networks

Constellations in space are networks of hundreds or even thousands of satellites all linked by laser communication. The distances achievable between each satellite create networks that can bridge distances circling the entire planet.

### Radio Frequency

Radio frequency (RF) technologies such as 3G, 4G, or even 5G, are typically used to connect end-users to the final leg of the communication network, the 'last mile'. Today, dense networks of cellphone towers provide this in cities. In the future high-altitude networks are intended to do the same for rural connectivity and satellites constellations for remote connectivity.



**Urban**  
Cities are mostly connected using fiber optic and copper cabling. A high density of people or devices economically justifies the installation of cellphone towers which each, individually, may only cover a few blocks of a street, or even less.

**Rural**  
In many rural areas, it is not economically sensible to deploy a dense network of fiber optic cables and cellphone towers, as too few people or devices per area require a connection. Moving the delivery of data to high-altitude networks changes the economics and allows for widespread network service.

**Remote**  
Remote areas typically have a very low density of people or devices per area, yet the total demand for connectivity by all end-users in sum is significant. Often no telecommunication infrastructure at all is available on the ground. Broadband service delivered by satellite constellations can cover vast areas and allow economic connectivity for remote regions populated by far-flung villages, ships, oilrigs, aircraft and so on.

## Welcome to Terabit Speed

Laser communication is blazing-fast. It can transmit huge amounts of data in fractions of a second and easily outperforms RF technology. The current world records with millimeter wave technology and in the optical domain are a clear illustration of this. The current records achieved a data rate that was over **320 times higher** for laser communication and these advances will only grow larger in the future.



Data	Size	Time*	Typical scenario
Audio Podcast	5 MB	0.004 s	Listening to a podcast while boating on the Amazonas
HD movie	4 GB	3.2 s	Streaming a movie during a long-distance flight
Self-driving car sensor data	25 GB	20 s	Send generated data to headquarters for AI training
Blueprint of human DNA	200 GB	160 s	Sending a copy to Mars (just in case)

\* Transmission time assuming current 10 Gbps laser communication technology

## Electromagnetic Waves

Laser communication allows for bandwidths inaccessible to other wireless long-distance communication technologies. Our current systems allow up to **10 Gbps** and we are working on pushing this to **multiple Tbps** (Terabit per second) in the future. This means no more buffering, no more dead spots in the middle of fields. Data rates like this are possible because laser communication uses an electromagnetic frequency that is many orders of magnitudes higher than what is used by RF technologies. And while RF is already reaching its technical limits laser communication is still in its infancy with a lot of potential for improvements in the future.

## So Small, It's Mobile

Good things come in small packages. So things are getting smaller these days. Mobile phones have shrunk from the size of house bricks to be truly handheld computers that fit in suit pockets. Computers used to take up an entire room but now sit comfortably on your lap. And satellites, too, are shrinking in the same way. No longer are they huge constructions of several metric tons that need a dedicated rocket launch to get into orbit. Nowadays, satellites are getting small. Smallsats, in fact. Or microsats only 10 cm<sup>3</sup> in size and weighing no more than 1.5 kg.

To match the reduction in size of satellite technology, and to best suit the needs of constellation builders in the stratosphere who are using super-light drones and balloons, we too focus on miniaturization with laser terminals that fit many airborne and spaceborne uses and ground stations capable of being transported and used wherever they are needed.

## Small. Smaller. Lasercom.

All of Mynaric's products are developed with their application in mind, so our terminals are carefully crafted to fit the restrictive low size, weight, and power consumption (SWaP) constraints of airborne and space scenarios and our ground stations are designed to meet the challenge of being mobile enough to serve their exacting terrestrial applications.

Scenario	Typical aperture diameter	Deployment time
Mobile Laser satellite gateway	0.4 m	0.5 man-days
Mobile X-band satellite gateway	5 m	3 man-days



## Built-in Security

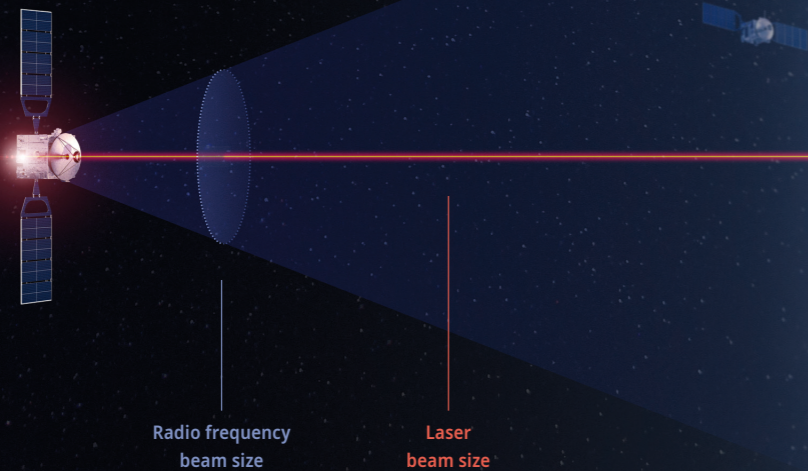
When you send an email to someone, you only intend for the recipient to read it. It does not matter whether it is to a friend or the company CEO, security really matters these days and current radio frequency (RF) communication does not offer it. However, laser communication does.

## Mission: Impossible

Laser communication systems use beams with very small beam divergence which is physically inaccessible to radio frequency technologies. This makes laser communication systems extremely secure because one would have to get into the narrow beam to eavesdrop on a connection. Considering that this beam is actually moving as it sends data, this is an almost impossible task to pull off.

Typical scenario	Link distance	Laser beam size	Ka-band beam size	X-band beam size
Air-to-ground link from UAV	50 km	1 m	1,600 m	3,200 m
Air-to-air link of high-altitude constellation	200 km	5 m	6,500 m	13,000 m
Space-to-ground link of Earth observation mission	1,400 km	35 m	45,000 m	90,000 m
Inter-satellite link of LEO constellation	4,000 km	111 m	145,000 m	290,000 m

Laser aperture size: 80 mm, Ka-band antenna size: 300 mm, X-band antenna size: 600 mm. Assuming physical limits for lowest possible beam size.



## No License Required for Operation

If you want to establish satellite internet you do not just have to build your satellite and launch it: you also have to apply for a license from every country you want to provide your service to via RF beams. You have to pay the costs associated with each licensing regime and you have to wait for your application to be accepted.

**Laser communication is not regulated** by the International Telecommunication Union and it can be used without restrictions and does not require costly licenses. The reason for this is that its inherent small beam size avoids interference with other systems and renders any restrictive regulation in the future highly unlikely.

## The Variation in Regulation

There is not just a long wait for the licenses necessary for operating RF-equipment in the Ka- or X-band; the licenses will also only allot you a fraction of the spectrum that is available and will only be approved after a costly application process.

Typical scenario	Typical available bandwidth	Time to approval	Free/Regulated
Satellite downlink X-band	1 GHz	>12 Months	Regulated
Satellite downlink Ka-band	2 GHz	>12 Months	Regulated
Satellite downlink Laser	12,000 GHz	Immediately	Free

# 1 Shareholders

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## Dear shareholder, We are pleased to report on another successful and industrious year for Mynaric.

Last year we made big leaps in moving from a technology-centric approach developing prototypes to a customer-centric approach delivering products:

- Serial production of ground stations for air and space applications has started,
- a new management team with significant industry competence was implemented, and
- the company moved to a dedicated building with expanded testing and production capabilities.

We are observing the market for aerospace communication networks move from planning to implementation stage and sub-system suppliers are racing to develop much needed capabilities and product maturity. We thank you, dear shareholder, for supporting our efforts to win this race to become the premier laser communication sub-system provider.

In the last year we have successfully started implementing one of the core elements of our business strategy: serial production. In September, we formally moved to serial manufacturing of our two ground stations for space and air applications, respectively. We are now in the process of moving all of our product portfolio into serial production, with the new management shaping and overseeing this transition. The new business leaders on the company's executive board bring proven experience and success in technology, sales and serial manufacturing. Their direction and oversight are focusing the company's activities on this key pillar of our strategy.

In Bulent we have an individual with invaluable experience of the New Space industry – gained at SpaceX almost from its inception – that will help take our space terminal into the burgeoning low Earth orbit constellations market. Hubertus's focus on sales in the air and ground segment is a huge asset based on a 20-year track record in global sales of deep tech products. Wolfram will continue to oversee the business strategy of the group, as well as its finance and administration, to allow both Bulent and Hubertus to play to their considerable commercial and technical strengths.

Our new, tailored building just a stone's throw from our former premises, and still at the heart of Bavaria's center of aerospace development, provides us with the right environment to lift our development, production and testing capabilities to a new level.

And this is now the really key period in our development as we turn a proposed strategy into a workable and successful reality and place Mynaric in the prime position to equip the expanding aerospace networks market. This is the moment Mynaric transitions from a technology- and prototype-centric company towards a customer- and product-centric company and means we are prioritizing creating reliable products suitable for the largest possible customer base, and thus market potential, above everything else. In 2018, therefore, we actively decided to push our initial product for the airborne segment technologically to a higher readiness level before transitioning it to production. This resulted in the fact that, while 2018 was our strongest financial year to date in which we more than doubled our total operating performance, we did not achieve the financial performance we were aiming at initially.


We are now planning to start producing our airborne product from the middle of 2019 onward and by doing so become the first and only company globally to offer mature and deployable laser communication products for airborne applications. Our product for mega-constellations in low Earth orbit is well on track to become the first available product for this market segment, too - we now expect to finish this terminal's qualification process in early 2020 and be able to deliver first flight units soon after. Our two types of ground stations are meanwhile already in production and round off our product portfolio of laser communication solutions.

As the market we envisioned for years finally takes tangible shape, we are very confident that our timing in offering a complete spectrum of laser communication products for all sorts of aerospace applications is just right. Aerospace communication networks have been promised by the likes of Facebook, SpaceX and Google for some time now yet 2019 seems to be the year projects move from the drawing board to implementation, requiring the supplier base to keep abreast. We are committed to becoming a key supplier for this emerging market that will augment communication infrastructure on the ground. An industry that will be essential to global economic growth in the coming decades, will connect the remaining 50% of the Earth's population to the internet, will enable the full digitalization of industries ranging from agriculture to transportation, and will provide secure communication on a global scale.


The successes we have achieved in 2018 would not have been possible without the incredible efforts of our hugely talented and highly committed staff. It is thanks to their knowledge and unparalleled abilities that Mynaric now finds itself the lead company commercializing laser communication products.

Our final vote of thanks, dear shareholder, goes to you for your continued support and faith in us. Together we aim to ensure that 2019 proves to be a pivotal 12 months that sees us move into prime position in the aerospace networks market driven by world-class products, exceptional personnel and – above all – an unwavering belief and desire to ensure Mynaric becomes the leading laser communication products manufacturer for the aerospace networks market.

Gilching, May 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 80-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 start-up 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 prototypes become serially produced products compatible with the largest number of airborne customers' needs. He is also responsible for Mynaric's serially-produced ground stations 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

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 for 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.

## COMMENT ON THE 2018 RESULTS

The following notes are intended to support the interpretation of the 2018 consolidated results. The key figures of the income statement of the consolidated financial statements of Mynaric AG are explained below:

Due to the increasing internationalization of its business and to provide improved transparency, Mynaric AG is preparing its first voluntary consolidated financial statements for the 2018 financial year. The previous year's figures are given as reference values. The group's companies Mynaric AG – hereafter 'AG', Mynaric Lasercom GmbH – hereafter 'GmbH', and Mynaric USA, Inc. – hereafter 'Inc.', are included in the consolidation. The AG provides services to its subsidiaries, including administration, finance, HR and PR. The GmbH runs the operative business of the group of companies and is responsible for technical development, production and sales of laser communication products. The Inc. is mainly responsible for sales in the North American market.

Given the structural nature of the market served by Mynaric – with long product development cycles, staggered payment milestones, and long-term partnerships – management believes that the group's total operating performance is the most meaningful indicator of business development, since this reflects not only sales but also inventory changes from production, other own work capitalized, and other operating income. In the following, these individual elements are examined.

2018 was the Mynaric group's strongest financial year to date, with total operating performance of EUR 7,384 thousand, more than double the previous year's figure (2017: EUR 2,973 thousand). Group revenues of EUR 1,591 thousand in fiscal year 2018 represent delivered finished products or completed milestones of major customer projects. Significant revenues resulted from the delivery of ground stations and from funded projects, which are usually carried out in cooperation with commercial consortiums and research institutes. Mynaric regularly uses such funding programs to further develop technology and thereby gain privileged access to new technologies, methods and approaches. The Mynaric group was able to achieve a significant increase in the change in inventories of unfinished goods of EUR 1,711 thousand compared with EUR -35 thousand in the previous year. This is due to the serial production of ground stations, some of which began during the financial year. The change in inventories reflects the material, personnel and overhead costs for products in production.

Other own work capitalised reflects the material, personnel and overhead costs for technical equipment and new developments provided by Mynaric. In 2018, other own work capitalized increased to EUR 3,906 thousand (2017: EUR 1,1248 thousand), mainly due to the intensified development of the terminal for satellite constellations and new air terminals. The cost of materials increased in fiscal year 2018 to EUR 2,635 thousand (2017: EUR 1,170 thousand) due to increased development performance and the commencement of serial production.

Personnel costs rose as planned compared to the previous year due to the accelerated expansion of the company and the associated increase in the number of employees. Other operating expenses of EUR 3,832 thousand were reduced by EUR 765 thousand compared to the previous year despite the strong growth of the company. As a result, the Mynaric group succeeded in reducing its personnel and cost of materials ratio to 133 percent of total operating performance in 2018 compared to 173 percent in the previous year, which is an indicator of increasing efficiency.

In summary, the Mynaric group can look back on a very successful 2018 financial year in which total operating performance increased to EUR 7.4 million with a slightly improved net loss of EUR 6,656 thousand.

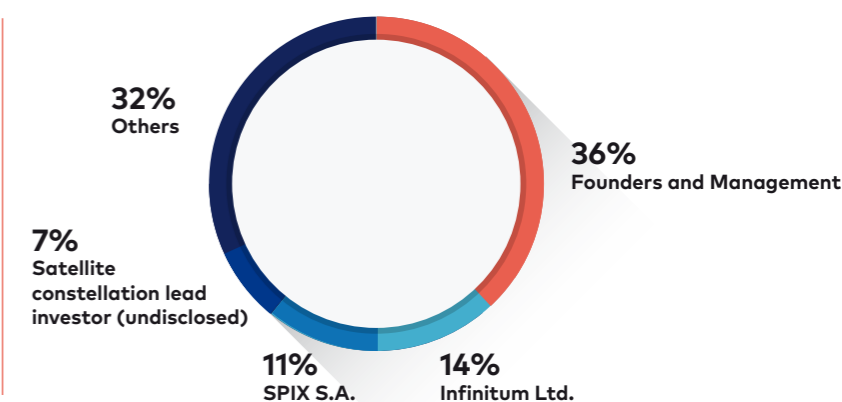
## THE MYNARIC SHARE

### Shares of Mynaric are predominantly owned by founders and management.

#### BASIC INFORMATION ABOUT THE MYNARIC SHARE

Stock Exchange	Open Market (Scale) at Frankfurt Stock Exchange
ISIN	DE000A0JCY11
Outstanding shares	2,904,304 bearer shares

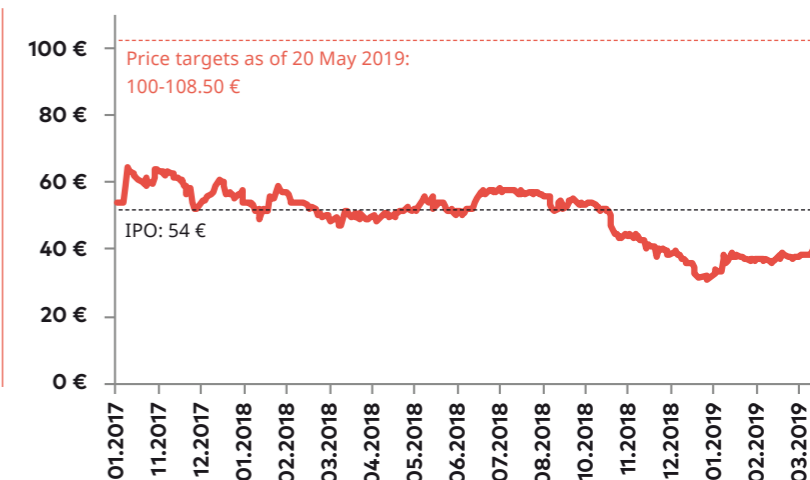
#### SHAREHOLDER DISTRIBUTION



#### RESEARCH COVERAGE



#### SHAREPRICE EVOLUTION



The shown distribution represents an approximation based on various data points and does not necessarily illustrate the actual share distribution as of the day of publication of this report.

## 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:

- May 28 MainFirst SMID Cap One-on-One Forum (Frankfurt)
- June 10-11 Roadshow with Hauck & Aufhäuser (London & Helsinki)
- June 12 Roadshow with Mainfirst (Milan)
- June 18-19 European Spring Midcap Event (Paris)
- June 24-25 Roadshow with Kochbank (Switzerland)
- November 25-27 German Equity Forum (Frankfurt)

## 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.



## REPORT OF THE SUPERVISORY BOARD

Dear Shareholders,

The following report of the Supervisory Board informs you about the activities of the Supervisory Board of the Mynaric AG in the financial year 2018 and the result of the audit of the annual financial statements 2018.

At all times during the year under review, the Supervisory Board fully performed the control and advisory tasks for which it is responsible under the law, the Articles of Association and the rules of procedure. In particular, the Supervisory Board advised the Executive Board on the management of the Company and supervised the actions of the management. The Supervisory Board was always consulted in a timely and appropriate manner on all decisions of fundamental and strategic importance. This was based on written and oral reports by the Executive Board to the Supervisory Board. The Executive Board informed the Supervisory Board regularly, promptly and comprehensively about all important issues relating to current business developments, the earnings and financial position, corporate planning, the future strategic development of the company and changes in risk situations. Events of particular importance for the situation and development of the company or its subsidiaries were always discussed in a timely manner. All measures of the Executive Board that are subject to the approval of the Supervisory Board were examined, discussed and ruled upon. In the year under review, the cooperation between the Executive Board and the Supervisory Board was constructive and based on trust in all respects.

The work in the 2018 financial year was based on the meetings of the Supervisory Board and the verbal and written reports of the Executive Board. After detailed examination and discussion, the Supervisory Board voted on the reports and resolution proposals of the Executive Board to the extent required by law, the Articles of Association or the Rules of Procedure. In individual cases, the Supervisory Board also passed resolutions other than at meetings. In addition to ordinary meetings, the Chairman of the Supervisory Board maintained regular contact with the Executive Board and was informed about the current business situation and important events. Due to the manageable size of the Supervisory Board with five members, no committees were formed.

In financial year 2018, the Supervisory Board held a total of five meetings on 10 April, 26 June, 23 October, 04 December and 11 December. In addition, two resolutions were adopted in the year under review using the circulation procedure.

The development of sales, earnings and employment as well as the financial position and liquidity of Mynaric AG and its subsidiaries were the

### MEETINGS OF THE SUPERVISORY BOARD AND MAIN AREAS OF CONSULTATION

### MEETINGS OF THE SUPERVISORY BOARD AND MAIN AREAS OF CONSULTATION

subject of regular deliberations at the Supervisory Board meetings. The Supervisory Board focused on the following topics:

- Goals for the Executive Board
- Structure of the stock option program
- Approval of the annual financial statements 2017
- Approval of semi-annual financial statements 2018
- Strategic development and budget 2019

The subject of the Supervisory Board meeting on 10 April 2018 was the business development of the past 2017 financial year and the financial statements of the Company and its subsidiary Mynaric Lasercom GmbH as of 31 December 2017. The Supervisory Board concurred with the results of the audit and approved the annual financial statements. Other topics discussed at this Supervisory Board meeting included the Executive Board reports on current market and business developments as well as on current liquidity developments. Various candidates for the Supervisory Board positions were also discussed, as Hans-Christian Semmler and Ronny Vogel declared that they no longer wished to serve on the Supervisory Board at the end of their term of office following the conclusion of the next annual general meeting. The appointment of the auditor was also discussed with the Executive Board and Supervisory Board preferring to move to RSM GmbH Wirtschaftsprüfungsgesellschaft due to Mynaric AG's international orientation.

In addition, at this meeting the Supervisory Board dealt with the specific structure of the stock option program, the bonus scheme, an internal signature guideline, a compliance guideline and a travel expense guideline.

On 24 April 2018, the Supervisory Board approved the agenda and invitation to the annual general meeting, which contained in particular the list of nominees for the new Supervisory Board and the proposal for the appointment of the auditor for 2018, by means of a written circulation procedure.

The meeting on 26 June 2018 focused on the organizational preparations for the annual general meeting in July 2018 and the Executive Board reports on current market and business developments as well as on the financial situation and liquidity developments.

At the meeting on 23 October 2018, Dr. Manfred Kruschke was re-elected Chairman of the Supervisory Board. Dr. Harald Gerloff and Dr. Gerd Gruppe were appointed as his deputies. Furthermore, the potential participation of a strategic investor, as well as the financial

## REPORT OF THE SUPERVISORY BOARD

### MEETINGS OF THE SUPERVISORY BOARD AND MAIN AREAS OF CONSULTATION

situation and liquidity developments, were discussed. The business activities of the subsidiary Mynaric USA Inc. were also discussed.

The semi-annual financial statements were approved on 26 October 2018 by means of the written circulation procedure.

At its meeting on 4 December 2018, the Supervisory Board discussed plans for 2019 as proposed by the Executive Board, as well as a possible increase in capital using the authorized capital.

The subject of the meeting on 11 December 2018 was the discussion on advanced negotiation on a capital increase, as well as on the use of additional financial resources through this that may be available under the 2019 budget.

The Supervisory Board also determined the number of stock options for the Executive Board and the management for 2019.

### CHANGES IN PERSONNEL

At the annual general meeting on 17 July 2018, Dr. Krischke, Dr. Gruppe, Dr. Gerloff, Dr. Billeter and Mr. Müller-Brühl were elected to the Supervisory Board for a period of five years in accordance with the Articles of Association because the previous term of office expired on the date of the annual general meeting. Hans-Christian Semmler and Ronny Vogel resigned from the Supervisory Board at their own behest following the completion of their term of office on 17 July 2018. At the Supervisory Board meeting on 23 October 2018, Dr. Krischke was confirmed as Chairman of the Supervisory Board.

Dr. Gerloff resigned from office for urgent personal reasons on 31 December 2018.

At the request of the Supervisory Board and the Executive Board, Thomas Mayrhofer was appointed to the Supervisory Board by the Munich District Court effective 01 April 2019, until the next annual general meeting.

### CORPORATE GOVERNANCE

All members always attended the meetings of the Supervisory Board.

In the year under review, no conflicts of interest concerning the members of the Supervisory Board arose in connection with their activities as members of the Supervisory Board of the Mynaric AG.

### AUDIT OF THE ANNUAL FINANCIAL STATEMENTS AND THE CONSOLIDATED FINANCIAL STATEMENTS

The company's auditor, RSM GmbH Wirtschaftsprüfungsgesellschaft, Munich, audited the 2018 annual financial statements prepared by the Executive Board and issued an unqualified audit report. The Supervisory Board received the financial statement documents and the auditor's report in good time and discussed them in detail at the Supervisory Board meeting on 07 May 2019.

The Supervisory Board itself has examined the 2018 annual financial statements of the Company prepared by the Executive Board within the framework of the statutory provisions. The Supervisory Board approved the results of the audit and raised no objections based on the final result of its own examination. As a result, the Supervisory Board approved the annual financial statements for the 2018 financial year on 07 May 2019. The annual financial statements are therefore approved in accordance with § 172 sentence 1 of the Stock Corporation Act. The 2018 consolidated financial statements were thereby accepted.

### THANKS

The Supervisory Board thanks the Executive Board and all employees for their high level of commitment and successful work in the past financial year. The Supervisory Board would like to thank the shareholders for their interest in our company and for the trust they have placed in us.

Gilching, May 2019

For the Supervisory Board

Dr. Manfred Krischke  
**Chairman of the Supervisory Board**

# 2

## Company Strategy and Milestones

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## VISION AND MISSION

**Mynaric's vision is a world with abundant, fast and affordable connectivity no matter where on Earth it is needed: even if that connectivity is not actually on Earth at all.**

## OUR MISSION

Mynaric's mission is a transformative one. We are transforming the nature of wireless backbone connectivity. This, in turn, will help transform the nature of communication itself.

The future will require abundant and ubiquitous high-speed connectivity for both people and machines no matter the location on Earth; or, indeed, whether on Earth at all: Remote industrial sites, isolated villages, vessels in the middle of oceans, passenger airplanes, high flying drones, satellites and, eventually, even asteroid mining stations and Martian settlements all need to be interconnected.

Mynaric helps communication service providers and other enterprises and organizations to access these applications, and more, by providing connectivity solutions for airborne and space communication needs. Using our heritage and expertise we are in the process of focusing on the commercialization of technologies and systems that have, hitherto, not been deployed at scale before.

The secret of our success lies in our employees who tackle problems with talent, creativity and passion and always keep the bigger picture in mind. They are the fuel for our mission to enable communication networks for the skies and beyond that are faster, less expensive and more secure than those on the ground.



CORPORATE STRATEGY

# Our strategy will see us become the leading equipment supplier for aerospace networks; be that in the air or in space.

Our portfolio of space, air and ground laser communication products is the basis of this approach and our focus on standardization and serial production is designed to deliver continued cost reduction to our customers. By merging this production cost efficiency with our ambition to become a one-stop shop for aerospace communication networks, as well as our physical presence in international markets, we aim to realize our vision of becoming the go-to supplier of laser communication products for constellation builders delivering internet from above the clouds. Mynaric's corporate strategy is based on four individual pillars:

**SERIAL PRODUCTION**

In basing our business strategy on laser communication's use in constellations, we have focused on serial production as the means by which we meet the demand for the incredibly large number of laser terminals that will be needed to build the aerospace communication networks being planned by numerous companies.

**CONTINUED COST REDUCTION**

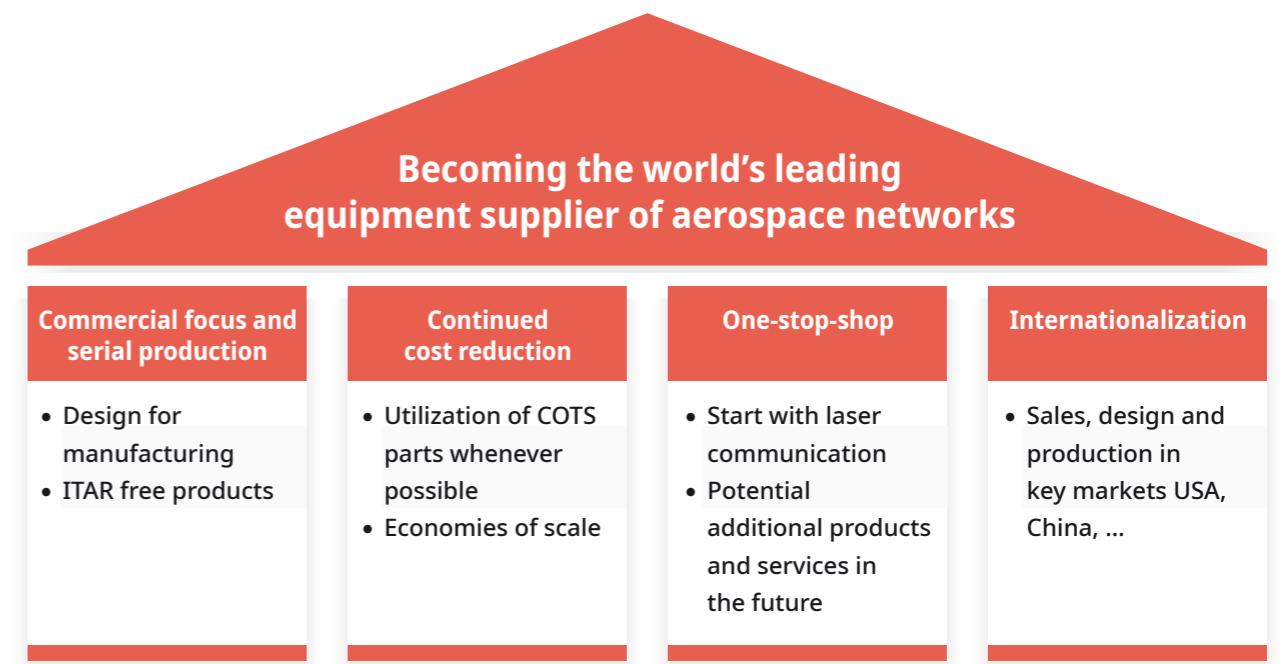
Mynaric's products are designed to be utilized in applications requiring hundreds – even thousands – of units so our strategy differs fundamentally from the classic state-subsidized space business and concentrates on production savings. We build products where others realize one-off projects.

**ONE-STOP-SHOP FOR AEROSPACE NETWORKS**

We use our technological heritage and prime position in the aerospace networks market to offer communication services beyond just market-leading products. We work with partners to realize complete connectivity solutions from concept-to-application. In this way, we position ourselves as a one-stop-shop for aerospace communication networks.

**INTERNATIONALIZATION**

Mynaric's international focus is an essential part of our strategy. Key industry players are found in the international market and for this reason Mynaric has physically placed itself at the heart of two of the most important – the United States and China – with the aim of acquiring new customers worldwide.



## EQUITY STORY

## The market in which we operate, the aerospace networks market, has been threatening to breakout for some time now.

## MARKET

What we are seeing now is the pivotal moment when the market moves from projection and planning to establishment and reality. Blueprints that companies have nurtured for some time are now being taken from the drawing board and translated into launches of initial satellites that will deliver future connectivity.

And Mynaric sits ready, at just the right time, to take full advantage. Just as the market is beginning to mature so are we in a transformative phase of our existence.

We have been making the argument for some time that existing connectivity on the ground cannot deliver the reach, bandwidths and security that airborne and spaceborne connectivity can provide. Numerous companies of all sizes are now making this point for us with plans for constellations of interconnected satellites and high-altitude platforms.

When companies such as Amazon, SpaceX, and Facebook announce that the future of connectivity will be sent down to both the connected and unconnected from space and the stratosphere then people pay attention. The philanthropic benefit is clear: a world with no digital divide. But the financial benefits are even clearer. A market that can only adequately sell to 50% of the world's population is missing out on increased income from markets yet to be realized.

As a result of this, the investments that these constellation builders are accruing are truly astonishing; SoftBank's \$1bn investment in OneWeb a recent example. By our reckoning, there are in the region of two dozen broadband constellations being planned in low Earth orbit, most of which will require inter-satellite links.

### STRONG PRODUCT LINE SPEARHEADING THE CHARGE INTO THE MARKET

What sees us ready to exploit the market before us is an increasing array of products based on our rich technological heritage and produced in series to meet the demands of constellation builders. Celebrating – in the same month that this report is published – our 10-year anniversary, we have shed blood, sweat and tears to bring Mynaric to a level of maturity that, we feel, no other company in our segment can boast. Our raison d'être is the commercialization of laser communication

### STRONG PRODUCT LINE SPEARHEADING THE CHARGE INTO THE MARKET

products for aerospace networks. At a time when our competitors were still preoccupied with one-off, large communication projects, we had already started down the path to serialization certain that we were witnessing the first stirrings of a new aerospace connectivity market. And 10-years later, as we watch numerous companies start work on establishing networks in air and space, we are supremely placed to move in tandem with the constellation builders, safe in the knowledge that we have the technology, capacity and products to meet their demands.

### AN EXCEPTIONAL MANAGEMENT TEAM STEERS A RESULTS-DRIVEN DIRECTION

To drive Mynaric to the forefront of this market – to ensure that we achieve our strategy to become the market leading international supplier of laser communication products – we have in place an exceptional triumvirate of management whose knowledge, expertise and acumen is, we believe, unparalleled in our market. Proven success and experience earned at world-renowned multinationals is just one part of what our executive team brings to Mynaric.

The Mynaric Executive Board maintains a clear focus on – and commitment to – what is expected of them by the company's Supervisory Board and shareholders. As well as direction and oversight, an ability to translate Mynaric's technology into commercial success remains the management's primary task.


The unrivalled experience that the three people leading Mynaric bring to the table synergizes into a potent executive force with strategy, technological prowess and commercial-focus all merging into an unstoppable head of steam driving the entire group into future successes.

### MYNARIC EXPERTLY PLACED TO BENEFIT

As we mark our tenth anniversary we have reached one of the most important stops on our journey towards the realization of our business strategy.

Finely attuned to the market we are addressing, we have timed our development to coincide with the long-awaited take-off in the aerospace networks market: moving in sync with our customers at just the right time and able to provide the technology they require, and in the numbers they require. The technology itself is, however, the clincher – more secure, smaller terminals for satellites which are reducing in size all the time, greater bandwidths, and the possibility of delivering connectivity in areas where existing cabled internet is too expensive and logistically too impractical. And all of this at a price at a reduced cost-per-bit to existing RF. No other company in our field commands our level of cost-to-performance ratio or the breadth of portfolio that we offer.

## COMPANY HISTORY AND MILESTONES

- 
- 2009** | Mynaric is established by former scientists of the German Aerospace Center (DLR) with the goal of commercializing decades' worth of experience of wireless laser communication for aerospace applications.
- 2012** | Mynaric starts working with customers on developing prototypes for air-to-ground and air-to-air demonstrations of laser communication solutions to advance know-how and showcase the maturity level of the technology. From there, Mynaric quickly establishes an international reputation for wireless laser communication for airborne applications and expands its market reach to include a wide variety of world-class customers and suppliers.
- 2016** | Mynaric expands into North America by establishing an office there to serve customers in the USA and Canada, as well as work on establishing greater visibility for the company in this key market. Based in Huntsville, Alabama, Mynaric USA supports American customers on special projects and necessary product modifications.
- 2017** | Mynaric continues on its growth path with a flotation on the German Stock Exchange to raise growth capital to enter serial production and push for product maturity. The brand Mynaric is established in September 2017 and supercedes the former brand Vialight.
- 2018** | Mynaric formally moves into serial production of its two optical ground stations for air and space applications and opens an office in Shanghai, China to cater for the burgeoning aerospace networks market in Asia. A strategic partnership with CEA-Leti secures rights to an advanced photodiode capable of delivering a decisive competitive advantage.
- 2019** | Bulent Altan, a former SpaceX Vice-President, joins Mynaric's executive board to lead on the company's space business. Hubertus von Janecek joins Bulent Altan and Wolfram Peschko on the executive board to lead on Mynaric's product-push in the air and ground segment. The lead investor of a satellite constellation takes a strategic stake in the company.

## BUSINESS HIGHLIGHTS 2018

- 'Outperform' rating and EUR 100 price target by MainFirst
- Mynaric starts serial production of ground stations for laser communication from air and space to ground
- Mynaric signs first satellite constellation MoU
- Mynaric wins prestigious 'Innovation Award' at Deloitte's Technology Fast 50
- Mynaric opens site in China due to booming Asian aerospace market
- Mynaric wins contract on ultra-secure data delivery from space
- Bulent Altan, renowned SpaceX veteran, joins Mynaric's executive board
- Mynaric raises EUR 11M in post-IPO financing from satellite constellation lead investor, at EUR 55 per share



## LAST YEAR IN REVIEW

## We began 2018 with an update on the progress of our laser terminal for space applications.

### COMMERCIAL DEVELOPMENTS

Our space terminal is the product that will interconnect the hundreds – and, eventually, thousands – of satellites that will constitute the low Earth orbit constellations that the likes of SpaceX, Amazon, Telesat and others are in the process of establishing. We will finish this terminal's qualification process in early 2020 and be able to deliver first flight units soon after.

Thanks to an exclusive partnership with CEA Leti, we announced in April work centring on the development of a new generation of Avalanche Photodiode. Our collaborative efforts with Leti will allow for vastly improved performance levels, far exceeding the already record-breaking values achieved by Mynaric's laser communication products. It is partnerships like these that are essential to secure and expand our position in the market.

In June, we revealed that we are working on a lightweight laser communication terminal for use on an unmanned aerial vehicle (UAV) for precision agriculture uses. The terminal, which is to be a variant of Mynaric's existing air-to-ground terminal, will come in an ultra-compact form to be compatible with UAVs of limited size and weight, without affecting their operational capabilities.

Last year also saw us formally move into serial production of our two optical ground stations for airborne and spaceborne applications. The start of serial production followed the initial delivery of the first optical ground station for satellite communication which is capable of establishing high speed bidirectional links with satellites in low Earth orbit (LEO).

This news was closely followed by our announcement that we had signed our first Memorandum of Understanding with a company building a LEO satellite constellation. A first launch of satellites, equipped with our laser terminals, is now expected to take place in 2020 and will serve as a demonstration mission ahead of a full roll-out of the constellation which will be made up of several hundred satellites. The full constellation is expected to require upwards of 1,000 laser terminals.

### COMMERCIAL DEVELOPMENTS

In November, we disclosed that we had opened a new site in Shanghai, China, to cater for the high demand for our products and the rapidly-expanding Asian aerospace communications market; in so doing, placing ourselves physically at the heart of one of the fastest growing aerospace markets in the world.

The same month we announced our collaboration with ArQit and a European-wide consortium – composed of European leaders in their field, such as QinetiQ of Belgium, BT of the United Kingdom and Fraunhofer IOF of Germany – to work on the delivery of cryptographic keys by satellite. The aim of the collaboration is to build a system capable of delivering quantum safe communication which can then be used by ArQit's customers to protect their communications against all kinds of cyber security threats, including those from emerging quantum computers. On successful completion of the first study phase, Mynaric could become the exclusive supplier of laser terminals to the project.

News of our appointment of former SpaceX vice-president Bulent Altan took the market by surprise when we made the announcement in early-2019. Bulent joined Mynaric to lead on space activities as well as to become the public face of the company. He served at SpaceX for over 12 years, building up its avionics department before becoming the vice president for satellite mission assurance and, as such, responsible for the Starlink constellation in his most recent position with the space company.

We have recently received €11 million from the lead investor in the constellation builder we have previously announced an MoU with. The investment demonstrates the huge potential that laser communication promises to play in future-proofing planned broadband constellations and clearly shows the importance that laser communication will play within the overall system.

### AWARDS & RECOGNITION

We have won two prestigious awards in the last 12 months. In November we were honored with the 'Innovation Award' at Deloitte's Technology Fast 50 ceremony in Cologne and in April we won the Gold Award for aerospace innovation at the Edison Awards in New York.

Additionally, in April 2018, our co-founders Markus Knappek and Joachim Horwath were inducted into the Space Technology's Hall of Fame for their, and Mynaric's, work on adapting laser communication originally developed as a space technology to commercial applications.

EXPECTATIONS FOR 2019

# We are transforming Mynaric from a technology-driven company building prototypes to a customer-driven company producing products.

**OVERVIEW**

Our development up until this point has been two-pronged: developing prototypes that match the expected needs of our customers, and then allowing our customers to perform technology validation to ensure that our systems provide the technological value ad that we claim they offer.

With that successfully achieved, and with the market now on the brink of commercial deployment of laser communication-enabled systems, we are transforming Mynaric from a technology-driven company building prototypes to a customer-driven company producing products, and one of our key priorities is now on application validation: ensuring that our technology is an appropriate and beneficial fit that works in concert with our customers commercial needs.

Of equal importance, therefore, is the move to get all of the Mynaric product family into serial production. 2018 saw us successfully move our two ground station models into manufacturing and the procedures and processes to expedite our air terminal into serial production is the company's main preoccupation for 2019, along with concurrent work on qualifying our space product ahead of manufacture thereafter.

Commercially, we will be working hard to win the first, firm orders for our inter-satellite link product and prime among this effort will be to establish ourselves as the sole provider of laser terminals to the satellite constellation whose lead investor took a strategic stake in Mynaric in early 2019.

We will be spending the next 12 months developing relationships with the numerous other constellation builders who are beginning to populate a market that will, without question, revolutionize the future of connectivity. With our laser communication terminal for airborne applications coming online within the next year, we will be formally introducing the product to the market with several live demonstrations of its capabilities for key customers.

We also plan to establish advanced testing capabilities to ensure that our products are fully qualified for the rigours of airborne and spaceborne operational deployment.

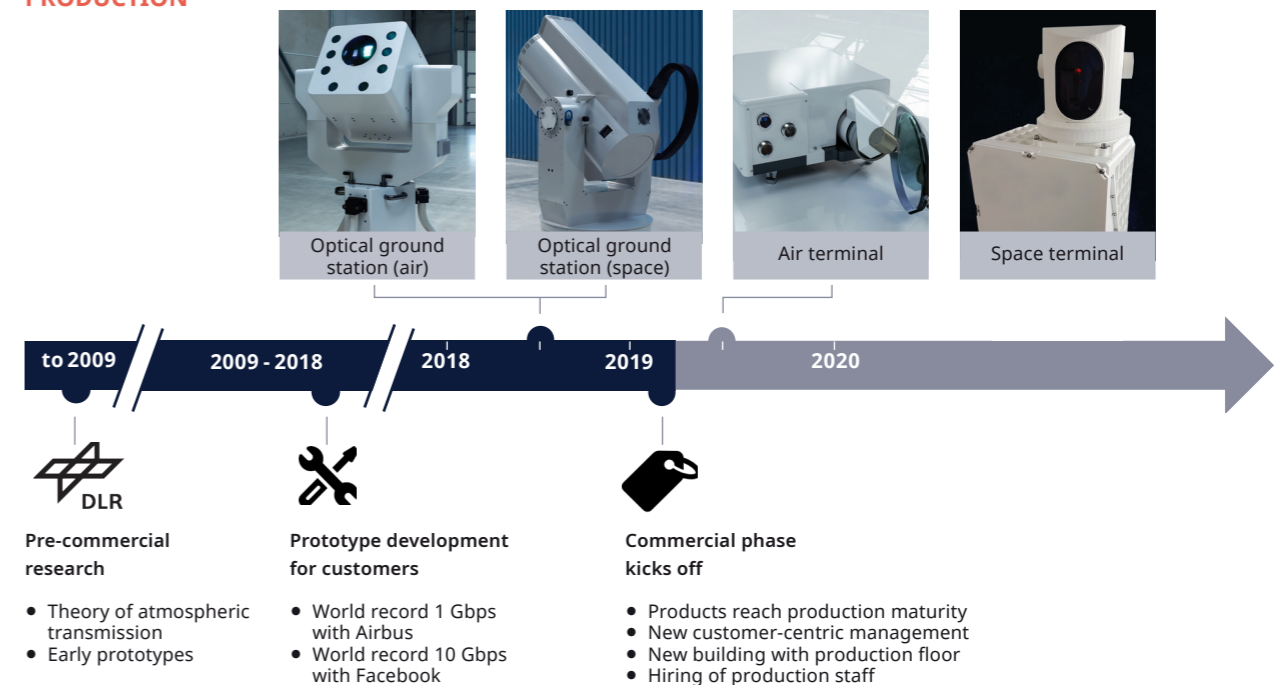
**OVERVIEW**

The respected research house Northern Sky Research (NSR) very recently published an in-depth overview of the market surrounding laser communication terminals in space. The report, which spoke at length to numerous key players in the market, concluded that, largely driven by the "impending wave of mega-constellations" needing inter-satellite links, a predicted cumulative revenue of \$3.7B awaits the laser communication terminal market between 2018 and 2028, 96% of which will account for inter-satellite links – the very application we are targeting with our space terminal in development. The report also notes how laser communication, as a technology, has "captured industry interest" as a "commercially viable satcom alternative".

The NSR also tellingly notes that "many optical equipment manufacturers are racing to address the market with a variety of products aimed at space-space (inter-satellite links) and space-ground optical connectivity solutions (ground stations)".

This is a race that we at Mynaric have been leading for some years now. Our nearest competitors are, we believe, still very much in the silver medal position. In 2019 we will work hard to consolidate our position as the gold standard in laser communication products for large-scale deployments.

**MYNARIC IS ENTERING SERIAL PRODUCTION**



## GROWTH

## Mynaric's success rests on four fundamental elements driving it in the direction set out by its mission and strategy: leadership, physical set-up (with a clear focus on serial production), internationalism, and, people.

## LEADERSHIP

Mynaric has recently re-organized its management as it moves into the next phase of its commercial development.

Bulent Altan joined Mynaric's executive board in March to head up our space division – most importantly the final development of our space terminal – and, as one of the most widely recognized figures in the New Space arena, act as the public face of the company.

Mynaric, as a company, is proud to line up behind a figurehead whose recognition, abilities and successes in the New Space field speak for themselves. Bulent's appointment demonstrates just how key the technology that Mynaric works on is for future aerospace networks. And his accepting of the key role in a company the size of Mynaric, after leading positions within SpaceX and Airbus, is a real vote of confidence in what we are working on here at Mynaric.

At key points in any organization's history there will come pivotal moments when a fundamental change in direction – such as repositioning from a research and development-heavy focus to a more commercial-heavy focus – will require new leadership skillsets.

From a start-up of just a handful of initial staff working on prototype development, through a €27M IPO on the German Stock Exchange, to an organization moving into serial production, Mynaric has been deftly and expertly piloted by its founders Markus Knappek and Joachim Howarth and, latterly and just as importantly, Wolfram Peschko, in the last ten years.

Mynaric has been brought to a point where it is in the pre-eminent position to start supplying and equipping constellations which will require a large quantity of units to both interconnect satellites and HAPS, and then connect those constellations with the ground.

The focus of Mynaric is now, therefore, laser-trained on providing commercial laser communication products that are both economic for

## LEADERSHIP

our customers and profitable for us as a company. In Bulent, Hubertus and Wolfram, Mynaric possesses the decisive executive blend to achieve the promised returns that our first ten years have been working towards reaping.

## FACILITIES

Mynaric is now headquartered in a tailored building in Gilching, just outside Munich, in the heart of the Bavarian aerospace community. Our move to a new building is a clear statement of intent on our part. Here, in self-contained premises over four floors and over 4,500 square meters, we are now within a building whose primary purpose is the serial production of the laser communication products that will transform the future of aerospace network connectivity.

The building is a physical manifestation of where we stand now on our growth path. As we celebrate our tenth anniversary, we find ourselves mature enough and strong enough to leave behind the vestiges of our start-up heritage and embrace the future at just the right time.

So we have created for ourselves a building containing all the elements to develop and, crucially, serially produce laser terminals: A state-of-the-art clean room, labs, R&D facilities, as well as testing equipment. All unified under a single roof and streamlining and logistically simplifying the production and development process.

## GEOGRAPHICAL REACH

A key pillar of our strategy is to turn Mynaric outwards to address directly the markets that are driving the growth in the aerospace networks market. The two key markets are the United States and China and, consequently, we have physically placed ourselves in the heart of each to speak personally with developers and business in both regions.

Our office in Huntsville, Alabama, United States has operated for over two years and serves as the Group's sales and engineering base for the North American market.

To be within just 2-3 hours' travel of companies such as SpaceX, Facebook, Amazon and within reach of areas such as Silicon Valley and Colorado Springs where US centres of aerospace excellence are based – and this includes Huntsville, Alabama itself – is a positive boon for our commercial endeavours in this key market.

A tie-up with the internationally-renowned Ohio State University in the summer of 2018, allowed Mynaric to avail itself of some of the leading aeronautical test facilities in the United States. The ability to leverage such a unique blend of aeronautic assets gives us a considerable commercial advantage.

**GROWTH**

**GEOGRAPHICAL REACH**

We have also, in the last six months, established a sales office in Shanghai, China to cater for the rapidly expanding aerospace market in South East Asia. Several Asian companies and organizations have announced plans to pursue satellite networks in low Earth orbit (LEO) and experts predict the country will become the world's second largest aerospace market in the coming years.

**PEOPLE**

Mynaric's success rests on the shoulders of its exceptionally gifted workforce. The software engineers, electrical engineers, and mechanical engineers – together with other accomplished professionals in supporting roles – constitute a staff of around 80 whose professionalism and focus have brought us to our current prime position.

Mynaric's recruitment policy reflects the philosophy we adopt towards our customers and our market: outward facing and keen to engage with the whole world. So we avail ourselves of the very best people we can find. The result is that we have assembled a diverse and international team of incredible talent whose abilities, commitment and belief in the aims of the company are carrying us from one success to another.

We recognize that maintaining a workforce of varied age, gender, specialism and nationality makes our company a more attractive place to work and, inevitably, a stronger and more dynamic organization.

**PEOPLE**

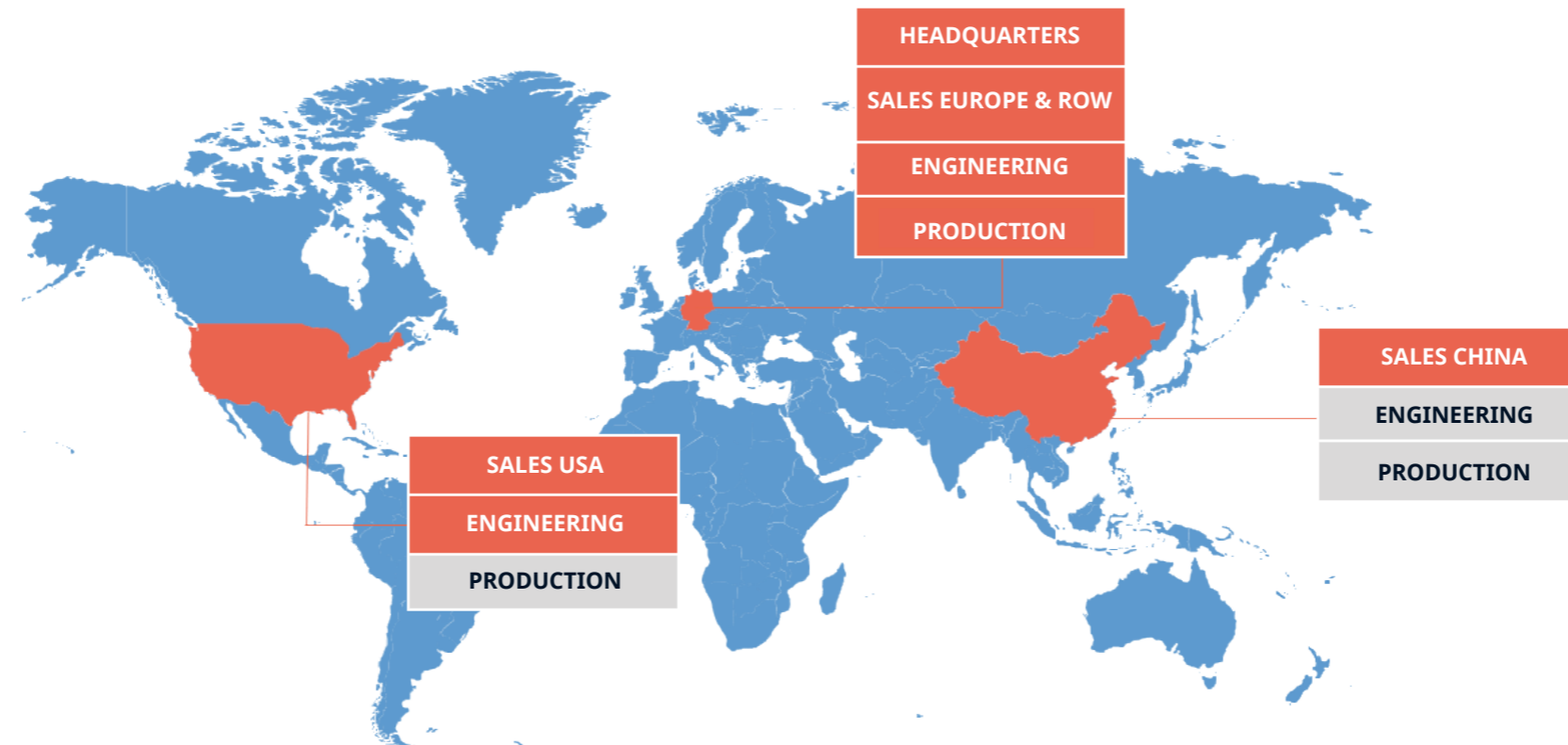
In return, Mynaric supports employee development with unhindered access to training and development, as requested, and a commitment to flat hierarchies – in whichever part of the company the employee is working for – to help stimulate an environment where developments and improvements can emanate from any member of staff, regardless of their seniority.

We also aim to be as flexible an employer as possible and, in pursuit of this, we implement family-friendly policies to assist our employees in achieving a better balance between their work and home lives.

In the last 12 months, we have grown from a company of 56 people at the end of 2017 to a company of around 80 today. This, we feel, demonstrates that Mynaric is not only an attractive commercial proposition but is also seen as an attractive professional proposition by those who wish to help create the next revolution in aerospace connectivity.

We plan to continue to grow our team and intensively hire additional staff in 2019 as we look to advance our products with additional expertise in the areas of production and quality, field application engineering, and R&D engineering.

**INTERNATIONAL PRESENCE IS THE BASIS FOR REGIONAL MARKET ACCESS**





# 3

## Market Insights

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## REVIEW

## The last 12 months have seen numerous key developments in the aerospace networks market

MARCH 2018

**SpaceX**

SpaceX receives permission from the Federal Communications Commission (FCC) for the launch of the its Starlink constellation's initial 4,409 satellites.

MAY 2018

**Facebook**

An IEEE Spectrum magazine article highlights construction permits submitted in Los Angeles by a Facebook subsidiary called PointView Tech which appears to show that the social media giant is looking to build two laser ground stations. The article proposes that Facebook is quite feasibly looking to utilize laser communication for its low Earth orbit communication satellite, Athena.

**ICEYE**

ICEYE, which is in the process of launching 18 microsats that are capable of seeing through clouds to provide clear pictures of the surface of the Earth, announces that it has raised \$34 million in a Series B funding round. It is also announced that BridgeSat will provide laser terminals to the company as well as ground services through its free-space optical network.

JUNE 2018

**Research**

Juniper Research reports that the number of connected aircraft will grow by 118% between 2018 and 2023. The report envisages some 34,000 commercial and business aircraft outfitted by 2023.

**Facebook**

It is reported that Facebook will pursue its plans to establish internet delivery from high-altitude platforms through a series of strategic partnerships with technology partners as opposed to using its own drone. The social media giant explains that it is ceasing production of its in-house Aquila drone but continuing work on its ultimate aim of "getting everyone, everywhere online" by partnering with "leading companies in the aerospace industry" such as Airbus, who are developing their own high-altitude pseudo satellite – the Zephyr S. The announcement is followed by the news that Mynaric has – in collaboration with Facebook – established a 10 Gbps air-to-ground laser link in the United States: a record laser link from a moving aircraft to the ground.

JULY 2018

**Facebook**

Facebook states its intention to launch a satellite in early-2019 capable of sending down broadband internet to the unconnected and underserved. The social media giant, in comments to Wired magazine, gave no specifics surrounding the Athena project but did state:

**"We believe satellite technology will be an important enabler of the next generation of broadband infrastructure, making it possible to bring broadband connectivity to rural regions where internet connectivity is lacking or non-existent."**

Facebook, July 2018

**Google**

Loon – formally Google Loon – reveals that it has won its first commercial contract supplying areas of Kenya with 4G internet access using high-altitude balloons, having already conducted successful operations in Peru and Puerto Rico.

AUGUST 2018

**Airbus**

Airbus announces that its unmanned aerial vehicle (UAV) – the Zephyr S – has logged a maiden flight of over 25 days, the longest duration flight ever made by a UAV.

SEPTEMBER 2018

**Telesat**

Speaking at the World Satellite Business Week conference in Paris in August, Erwin Hudson, Telesat LEO vice president, states that whilst the company's ideal LEO constellation size is 292 satellites, the system is being designed to scale to 512

**"if ...we can justify that on a business and economic basis".**

Telesat, September 2018

**Airbus**

Airbus reports a successful high-altitude balloon demonstration of stratospheric 4G/5G defense applications.

**Research**

The Financial Times cites Seraphim Capital research that shows private investment in space totaled \$3.4bn in the year to June 2018. Mark Boggett, chief executive of Seraphim, states:

**"In the past few years, investor interest in space has gone crazy."**

Seraphim Capital, September 2018

## REVIEW

## SEPTEMBER 2018

**Inmarsat**

Inmarsat enters into a 10-year strategic collaboration with Panasonic Avionics to offer broadband in-flight connectivity as well as “high-value solutions and services to customers in the commercial aviation industry worldwide”. The company is already working with partners Deutsche Telekom, Vodafone and Nokia to build the European Aviation Network (EAN).

**Loon**

Loon reports it has established a data connection of 1,000 km using seven balloons at an altitude of 20 km. A blog on the company's website explained:

**“The connection originated from the ground at our launch site in Nevada, where packets of data were transmitted to a balloon 20 km overhead. That data travelled nearly 1,000 km along a network of six additional balloons, going from desert to mountains and back again. A few weeks later, we achieved another milestone by successfully sending data over 600 km between two balloons – our longest point-to-point link to date.”**

*Loon, September 2018*

## OCTOBER 2018

**SpaceX**

SpaceX makes personnel changes to the team heading up the Starlink project at its Seattle HQ in a bid to expedite the establishment of the company's communication constellation.

## NOVEMBER 2018

**Roscosmos**

The Russian space agency – Roscosmos – publishes a report unveiling plans to set up a satellite constellation called Marathon to serve the expanding Internet of Things (IoT) market.

**LeoSat**

LeoSat Enterprises, which is aiming to establish “the fastest, most secure and widest coverage data network in the world via a constellation of low-earth-orbit satellites”, announces that it has secured commercial agreements valued at over \$1 billion.

**Hongyan**

At the Zhuhai Airshow, China states that it will launch the first of around 320 satellites for a planned low Earth orbit communications constellation before the end of 2018. The launch satellite will be one of nine

## NOVEMBER 2018

satellites orbited by 2020 as a pilot demonstration for the Hongyan system – a 300+ satellite system which will provide global coverage by 2025.

**Research**

Morgan Stanley declares that 2019 will “be the year for space” led by the likes of Blue Origin and SpaceX, as well as a “flurry” of young space companies. Morgan Stanley estimates that the space economy will be worth more than \$1 trillion in 2040 — with SpaceX projected to double, or even quintuple, its valuation “significantly tied to the developments related to satellite broadband”.

Northern Sky Research anticipates strong demand for commercial Earth observation products and services in the next decade as satellite constellations offer an increasing array of optical, radar, hyperspectral and video imagery and data. In its report “Satellite-Based Earth Observation, 10th Edition” NSR predicts annual demand for Earth observation data and services to rise from just over \$3 billion to \$6.9 billion.

**Amazon**

Amazon enters the space market and says that its Amazon Web Services Ground Station unit will build 12 satellite facilities around the world with a view to having them online by the middle of 2019. The retail giant's AWS Ground Station cloud business is partnering with several satellite companies, including Spire Global, DigitalGlobe and BlackSky.

**Space X**

The FCC agrees to SpaceX's application to launch an additional 7,518 satellites for its Starlink LEO constellation. The FCC also approves similar requests from Kepler, Telesat and LeoSat who will also deploy hundreds of internet-providing satellites.

On the back of this announcement Professor Mark Handley, a University College London Professor of Networked Systems, demonstrates his simulator based on public details from SpaceX's Federal Communications Commission (FCC) filings to understand the latency properties of the network. He concludes that the Starlink network can provide lower latency communications than any possible terrestrial optical fiber network for communications over distances greater than about 3,000 km. Starlink, he claims, “will be massively profitable”.

## DECEMBER 2018

**Airbus**

Airbus formally opens its Wyndham Airport operating site which will be home to the Zephyr ‘pseudo-satellite’ unmanned aerial vehicle (UAV).

## REVIEW

## DECEMBER 2018

**OneWeb**

OneWeb announces that, thanks to better-than-expected performance of its first 10 demonstration satellites, its constellation can be trimmed by around a third to 600 satellites, down from 900.

**SpaceX**

SpaceX raises \$500m for its Starlink satellite internet service along with \$28.7 million from the U.S. Air Force Research Laboratory for additional research work on Starlink.

## JANUARY 2019

**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 intersatellite links, which create – albeit with speeds of just a few Megabits per second – a system of signals traveling up to a satellite and then being passed along from satellite to satellite without the need to make intermediate hops to ground stations.

**Google**

Loon announces a partnership with Telesat in a deal that will see Loon's custom software service for managing its LTE balloon fleet be put to use controlling Telesat's new constellation of low Earth orbit satellites. This second commercial deal for Loon is part of a drive on the part of the company to push more of its technology into the commercial space and telecom sectors.

**Facebook**

It is revealed that Facebook is working with Airbus to test drones in Australia, and develop a solar-powered drone to beam the internet across the world.

**SpaceX**

A "strategic realignment" of SpaceX's workforce sees a 10% cut in headcount to streamline and focus the company's efforts with regard to space tourism and Starlink, according to the Huffington Post.

## FEBRUARY 2019

**OneWeb**

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

Additionally, a number of Russian organizations announce that they have bought a majority share of the OneWeb Russian joint venture, easing lingering fears from late-2018 that the constellation was going to face security concerns from the Russian government who saw it as an intelligence and national security risk.

## FEBRUARY 2019

**Facebook**

Viasat reveals it is working with Facebook 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.

**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 put into operation over 1,000,000 ground stations which will be required by customers to utilize the proposed Starlink constellation; a constellation that will eventually consist of 12,000 satellites.

## MARCH 2019

**OneWeb**

OneWeb announces a new \$1.25 billion financing round led by SoftBank which, CEO Adrian Steckel says, will "make OneWeb's service inevitable".

**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!" 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."**

*Thinknum, March 2019*

## APRIL 2019

**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 \$125 million USD in Loon. Loon obtains the right to invest the same amount in HAPSMobile in the future.

REVIEW

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. It is further reported that work on the constellation is being overseen by former SpaceX president of satellites Rajeev Badyal.

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 both Airbus Defence and Space and a partnership of 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.

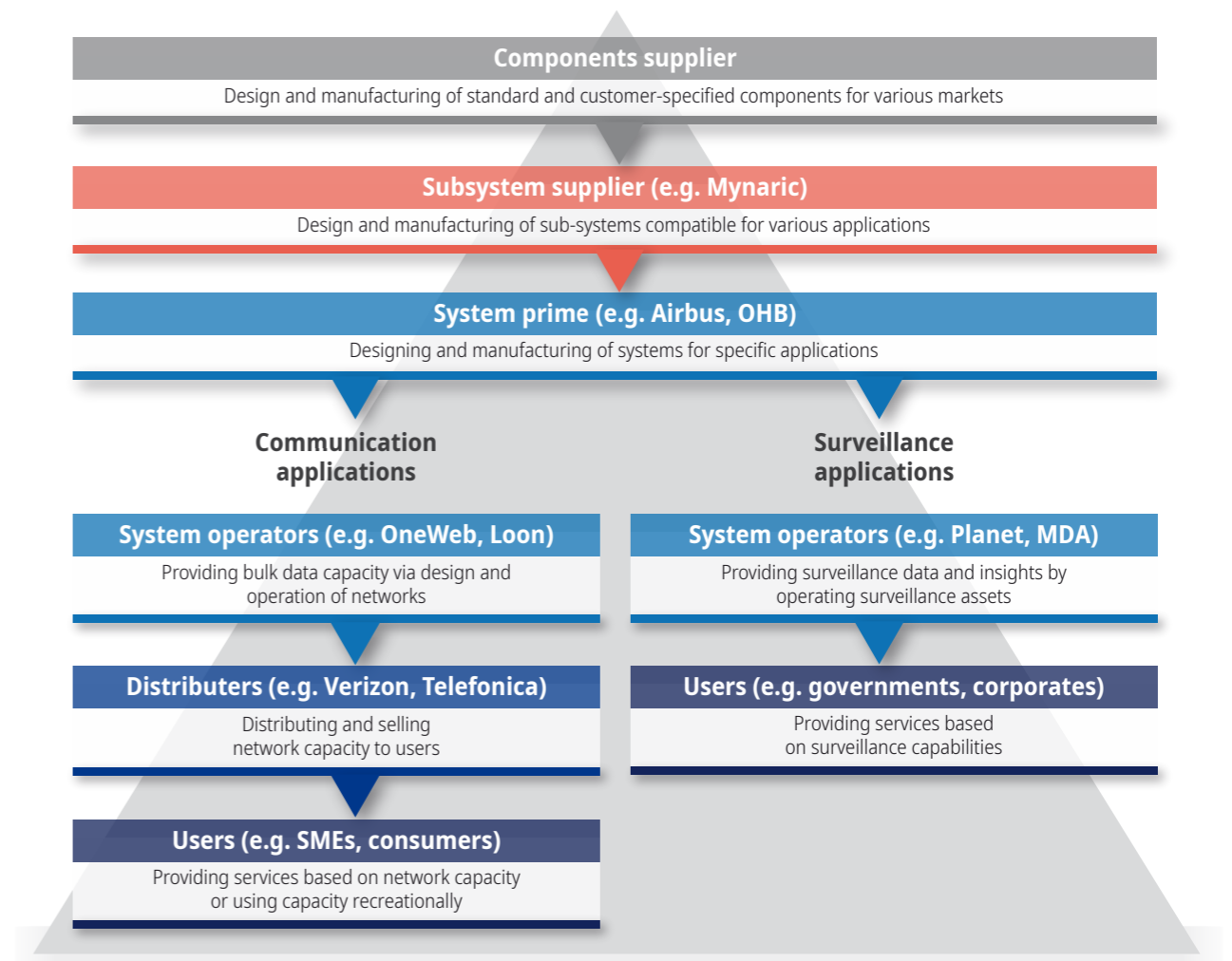
SpaceX

The industry is caught by surprise when SpaceX announces the launch of the first batch of its 'demonstration' satellites for its Starlink constellation. A total of 60 satellites are planned to be launched on a single Falcon Heavy to allow SpaceX to "see the deployment scheme and start putting [its] network together".

All of the above developments are in the public domain and have been carried in recognized titles available online. A list of sources is available from Mynaric on request.

MARKET STRUCTURE

Mynaric is positioned at the subsystem level of the value chain.



## FORECAST

## 2019: the Year for Space "We expect industry and technological milestones and capital formation will up the ante in 2019" - Morgan Stanley

As noted above, Morgan Stanley predicted in late-2018 that 2019 would be "the year for space" and we see nothing on the horizon that leads us to believe this crucial year for the market will be anything other.

Developments predicted for 2018 in our last annual report largely became reality as corporate interest in aerospace communication networks reached new levels. By our calculation, there are over 90 companies now in the process of planning or establishing low Earth orbit constellations with around a third of these possessing capabilities to provide fiber-like broadband connectivity. The companies establishing these constellations are largely developing along one of two applications: communication and surveillance.

Whilst the communication constellations being planned by SpaceX, Amazon, OneWeb, and Google understandably attract most of the media coverage, developments in the surveillance field – Earth observation especially – should not be overlooked. EarthNow, ExactEarth, Planet, SpaceView, and ICEYE are just a small selection of companies actively establishing Earth observation constellations.

Several constellation builders will actively begin, or continue, launches of satellites to start populating their constellations. SpaceX is to imminently launch a massive batch of satellites for its Starlink constellation and will see up to six more launches of satellites before the year's end and OneWeb will also continue with further satellite launches, having seen the first series of its satellites launched earlier this year.

It can also be expected that Facebook continues work on its Athena project with an initial launch expected sometime in 2019. While there is no specific comment from Amazon as to when it will begin launching first satellites for its Project Kuiper LEO constellation it will no doubt be looking to get initial satellites into low Earth orbit as soon as possible seeing that it has positioned itself as a direct competitor to SpaceX.

Away from the key American market the Chinese will launch more satellites for its Hongyan constellation, and Roscosmos's Marathon constellation may well launch see its first launches.

These activities are likely to send shockwaves through the board rooms of legacy players in the satellite industry who have been in a state of denial towards LEO constellations so far. It has also triggered a level of media interest that the industry has not seen before. Both will provoke even more players to begin, or accelerate, projects to secure market shares in the rapidly developing aerospace communications market.

With \$125 million of SoftBank's money underpinning it, Loon will seek further commercial agreements and will leverage HAPSMobile's aircraft (once development work on it has been completed) to jointly develop a communication payload available across both services. The two ventures will also start work on a common ground station that will work with the technology of each company. Airbus, quite possibly in collaboration with Facebook, will continue to develop the Zephyr S as a key plank of its Network for the Skies project.

The commercial aviation sector will see continued growth with regard to In-flight Entertainment and Connectivity (IFEC) and wider connected aircraft developments (in areas such as real-time monitoring and advanced avionics). Much of this push will come from the United States given the demand from passengers for in-flight internet access as well as from Asia where growing air passenger numbers and the increase in the use of personal electronic devices will drive growth.

On the ground, Amazon will begin building its network of ground stations to work with its Amazon Web Services offering as well as its proposed new Kuiper constellation. The first 12 ground stations are expected to be completed before the end of this year. Amazon Web Services and Iridium will also imminently launch CloudConnect: a development that will see the rest of the world brought within reach of AWS's Internet of Things services.

Most tellingly in the aerospace networks market over the next year will be the continued involvement of numerous small and medium-sized companies involved in driving progress.

In true New Space style, disruptors of all shapes and sizes are capitalizing on a market whose promise is clear to see for those who understand the limitations of current connectivity. And it is against this backdrop that we believe the market will grow even more rapidly in the next 12 months.

# 4

## Consolidated Financial Statements 2018

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## PROFIT AND LOSS STATEMENT

in EUR	2018	2017
Sales revenues	1,591,454.18	1,681,016.10
Decrease or increase in finished goods and work in progress	1,711,424.24	-35,046.38
Other own work capitalized	3,905,530.71	1,247,743.30
Other operating income	175,390.06	78,941.37
<b>Total operating performance</b>	<b>7,383,799.19</b>	<b>2,972,654.39</b>
Cost of materials		
a. Cost of raw materials, supplies and purchased goods	-1,554,360.31	-666,262.69
b. Expenses for purchased services	-1,080,413.83	-503,441.39
	-2,634,774.14	-1,169,704.08
Personnel expenses		
a. Wages and salaries	-6,075,391.69	-3,447,346.65
b. Social security contributions and expenses for pensions and other employee benefits	-1,088,052.00	-520,592.83
	-7,163,443.69	-3,967,939.48
Depreciation on intangible fixed assets and property, plant and equipment	-409,236.14	-190,357.65
Other operating expenses	-3,831,541.00	-4,596,933.73
Other interest and similar income	24.09	40,785.51
Interest and similar expenses	-0.54	-9,729.39
Taxes on income and earnings	249.07	0.00
<b>Earnings after taxes</b>	<b>-6,654,923.16</b>	<b>-6,921,224.43</b>
Other taxes	-1,279.06	0.00
<b>Net loss for the year</b>	<b>-6,656,202.22</b>	<b>-6,921,224.43</b>
Losses carried forward from the previous year	-10,062,147.79	-3,140,923.36
<b>RETAINED LOSS</b>	<b>-16,718,350.01</b>	<b>-10,062,147.79</b>



**BALANCE SHEET**

<b>ASSETS</b>		
in EUR	31.12.2018	31.12.2017
<b>A. Fixed assets</b>		
I. Intangible assets		
1. Self-created industrial property rights and similar rights and assets	5,014,441.33	1,108,910.62
2. Purchased concessions, commercial property rights and similar	115,327.00	194,518.00
	5,129,768.33	1,303,428.62
II. Tangible assets		
1. Technical equipment and machinery	748,260.00	499,456.35
2. Other equipment, factory and office equipment	356,591.00	305,585.00
3. Advance payments	1,346,129.19	0.00
	2,450,980.19	805,041.35
	<b>7,580,748.52</b>	<b>2,108,469.97</b>
<b>B. Current assets</b>		
I. Inventories		
1. Raw materials and supplies	23,086.42	128,835.74
2. Unfinished goods	2,003,303.55	291,879.31
3. Advance payments	362,383.60	0.00
	2,388,773.57	420,715.05
II. Receivables and other assets		
1. Trade receivables	317,101.84	255,611.60
2. Other assets	445,011.88	340,688.63
	762,113.72	596,300.23
III. Cash on hand and bank balances	15,236,139.20	28,447,902.96
	<b>18,387,026.49</b>	<b>29,464,918.24</b>
<b>C. Prepaid expenses</b>	75,682.36	87,658.13
	<b>75,682.36</b>	<b>87,658.13</b>
<b>TOTAL ASSETS</b>	<b>26,043,457.37</b>	<b>31,661,046.34</b>

**BALANCE SHEET**

<b>LIABILITIES</b>		
in EUR	31.12.2018	31.12.2017
<b>A. Equity</b>		
I. Subscribed capital	2,704,304.00	2,704,304.00
II. Capital reserves	37,341,265.53	37,341,265.53
III. Exchange rate differences	-9,829.46	37,486.45
IV. Retained loss	-16,718,350.01	-10,062,147.79
	<b>23,317,390.06</b>	<b>30,020,908.19</b>
<b>A. Provisions</b>		
Other provisions	1,309,887.22	635,491.37
	<b>1,309,887.22</b>	<b>635,491.37</b>
<b>C. Liabilities</b>		
1. Trade payables	1,270,284.91	755,678.63
2. Other liabilities	145,895.18	248,968.15
	<b>1,416,180.09</b>	<b>1,004,646.78</b>
<b>TOTAL LIABILITIES</b>	<b>26,043,457.37</b>	<b>31,661,046.34</b>

## STATEMENT OF CHANGES IN SHAREHOLDER'S EQUITY

in EUR	Subscribed capital	Capital reserves	Retained loss	Exchange rate differences	Equity
Balance as of 01 January 2018	2,704,304.00	37,341,265.53	-10,062,147.79	37,486.45	30,020,908.19
Exchange rate differences				-47,315.91	-47,315.91
Consolidated net loss for the year			-6,656,202.22		-6,656,202.22
Balance as of 31 December 2018	2,704,304.00	37,341,265.53	-16,718,350.01	-9,829.46	23,317,390.06

## STATEMENT OF CHANGES IN FIXED ASSETS

in EUR	Acquisition or manufacturing costs				Depreciation				Book values	
	Balance 01.01.2018	Additions	Disposal	Balance 31.12.2018	Balance 01.01.2018	Additions	Disposal	Balance 31.12.2018	Balance 31.12.2017	Balance 01.01.2018
<b>I. Intangible assets</b>										
1. Self-created industrial property rights and similar assets and rights	1,108,910.62	3,905,530.71	0.00	5,014,441.33	0.00	0.00	0.00	0.00	1,108,910.62	5,014,441.33
2. Purchased concessions, commercial property rights and similar	212,563.31	63,095.55	0.00	275,658.86	18,045.31	142,286.55	0.00	160,331.86	194,518.00	115,327.00
	1,321,473.93	3,968,626.26	0.00	5,290,100.19	18,045.31	142,286.55	0.00	160,331.86	1,303,428.62	5,129,768.33
<b>II. Tangible assets</b>										
1. Technical equipment and machinery	674,411.10	377,240.48	0.00	1,051,651.58	174,954.75	128,436.83	0.00	303,391.58	499,456.35	748,260.00
2. Other equipment, factory and office equipment	364,519.51	209,510.57	-97,137.05	476,893.03	58,934.51	138,512.76	-77,145.24	120,302.03	305,585.00	356,591.00
3. Advance payments	0.00	1,346,129.19	0.00	1,346,129.19	0.00	0.00	0.00	0.00	0.00	1,346,129.19
	1,038,930.61	1,932,880.24	-97,137.05	2,874,673.80	233,889.26	266,949.59	-77,145.24	423,693.61	805,041.35	2,450,980.19
<b>TOTAL FIXED ASSETS</b>	<b>2,360,404.54</b>	<b>5,901,506.50</b>	<b>-97,137.05</b>	<b>8,164,773.99</b>	<b>251,934.57</b>	<b>409,236.14</b>	<b>-77,145.24</b>	<b>584,025.47</b>	<b>2,108,469.97</b>	<b>7,580,748.52</b>

## CASH FLOW STATEMENT

in EUR	2018
<b>Net loss of the year</b>	<b>-6,656,202.22</b>
Depreciation on intangible fixed assets and property, plant and equipment	409,236.14
+/- Increase/decrease in provisions	674,395.85
+/- Other non-cash expenses/income	-227,494.64
-/+ Increase / reduction of the inventories, accounts receivable, as well as other assets that are not assigned to investment or financing activities	-2,121,896.24
+/- Increase / reduction of liabilities from accounts receivable, as well as other liabilities that are not assigned to investment or financing activities	411,533.31
-/+ Profit/Loss from the disposal of fixed assets	13,400.00
+/- Interest expenses/interest income	-23.55
+/- Income tax expense/income	-249.07
-/+ Income tax payments	249.07
<b>Cash flow from operating activities</b>	<b>-7,497,051.35</b>
- Payments made for investments in intangible fixed assets	-3,968,626.26
+/- Proceeds from disposals of property, plant and equipment	6,591.81
- Payments for investments in tangible fixed assets	-1,932,880.24
+ Interest received	24.09
<b>Net cash-flow from investing activities</b>	<b>-5,894,890.60</b>
+ Proceeds from subsidies/grants received	227,494.64
- Paid interest	-0.54
<b>Cash flow from financing activities</b>	<b>227,494.10</b>
<b>Fluctuations in the exchange rate</b>	<b>-122,400.04</b>
<b>Effective change in cash and cash equivalents</b>	<b>-13,286,847.89</b>
+/- Cash and cash equivalents due to exchange rates	75,084.13
+ Cash and cash equivalents at the beginning of the period	28,447,902.96
<b>CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD</b>	<b>15,236,139.20</b>

## REPORT OF THE INDEPENDENT AUDITOR

Mynaric AG, Gilching

We have audited the consolidated financial statements of Mynaric AG, Gilching and its subsidiaries (the Group) – comprising the consolidated balance sheet as of 31 December 2018, the consolidated income statement, the notes to the consolidated financial statements, the consolidated statement of changes in equity and the consolidated cash flow statement – for the business year from 01 January to 31 December 2018, including the presentation of the accounting policies.

In our opinion, based on the findings of our audit, the accompanying consolidated financial statements comply in all material respects with the requirements of German commercial law applicable to corporations and give a true and fair view of the net assets and financial position of the Group as of 31 December 2018 and of its profit situation for the business year from 01 January to 31 December 2018 in accordance with German principles of proper accounting.

In accordance with § 322 para. 3 sentence 1 HGB, we declare that our audit has not led to any concerns regarding the accuracy of the consolidated financial statements.

### BASIS FOR THE AUDIT OPINION

We conducted our audit of the consolidated financial statements in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW). Our responsibility under these rules and principles is further described in the section "Auditor's responsibility for the audit of the consolidated financial statements" of our audit opinion. We are independent of the Company pursuant to the provisions of German commercial and professional law and have performed our other German professional duties in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to support our opinion on the consolidated financial statements.

### RESPONSIBILITY OF THE LEGAL REPRESENTATIVES AND THE SUPERVISORY BOARD FOR THE CONSOLIDATED FINANCIAL STATEMENTS

The legal representatives are responsible for the preparation and fair presentation of the consolidated financial statements in accordance with German commercial law, which comply in all material respects with the requirements of German commercial law applicable to corporations, and for the presentation of the net assets, financial and profit situation of the Group in accordance with German principles of proper accounting. In addition, the legal representatives are responsible for the internal controls that they have determined to be necessary in accordance with German generally accepted accounting principles to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the legal representatives are responsible for assessing the Group's ability to continue as a going concern. They are also responsible for disclosing matters relating to the continuing operation of the entity, if relevant. In addition, they are responsible for accounting for the continuing operations of an enterprise on the basis of its accounting principle, unless this is contrary to fact or law.

The Supervisory Board is responsible for monitoring the Group's accounting process for the preparation of the consolidated financial statements.

### RESPONSIBILITY OF THE AUDITOR FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS

Our objective is to obtain reasonable assurance whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an opinion that includes our audit report on the consolidated financial statements.

Reasonable assurance is a high level of assurance, but not a guarantee, that an audit conducted in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW) will always reveal a material misstatement. Misstatements can result from violations or inaccuracies and are regarded as material if it could reasonably be expected that they will individually or collectively influence the economic decisions of users made on the basis of these consolidated financial statements.

During the audit, we exercise our best judgment and maintain an analytical attitude. In addition,

- we identify and evaluate the risks of material misstatement, whether intentional or not, in the consolidated financial statements, plan and perform audit procedures in response to those risks, and obtain audit evidence sufficient and appropriate to provide a basis for our audit opinion. The risk that material misstatements will not be detected is greater for violations than for inaccuracies, as violations may involve fraudulent collusion, falsification, intentional incompleteness, misrepresentation, or the overriding of internal controls.
- we gain an understanding of the internal control system relevant to the audit of the consolidated financial statements in order to plan audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of those systems.
- we evaluate the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by the legal representatives as well as the related disclosures.
- we draw conclusions about the appropriateness of the accounting principle applied by the legal representatives for the continuation of the business activity and, on the basis of the audit evidence obtained, whether there is a material uncertainty in connection with events or circumstances that could cast significant doubt on the Group's ability to continue as a going concern.
- If we conclude that there is a material uncertainty, we are required to express an opinion on the related consolidated financial statements or, if the information is inappropriate, to modify our opinion. We draw our conclusions on the basis of the audit evidence obtained up to the date of our audit opinion. Future events or circumstances may, however, result in the Group no longer being able to continue its business activities.
- we express an opinion on the overall presentation, the structure and the content of the consolidated financial statements including the disclosures and whether the consolidated financial statements present the underlying transactions and events in such a way that the consolidated financial statements give a true and fair view of the net assets, financial position and profit situation of the Group in accordance with German principles of proper accounting.

Among other things, we discuss with those responsible for monitoring the planned scope and timing of the audit and significant findings of the audit, including any deficiencies in the internal control system that we identify during our audit.

Munich, 24 April 2019

**RSM GmbH**  
Auditing Firm  
Tax Consultants

Zelger  
Auditor

Haslauer  
Auditor

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

### 1. GENERAL INFORMATION

Mynaric AG is the parent company of the Mynaric Group. Its registered office is in Gilching which is entered in the Commercial Register of the Munich District Court (Reg. No. HRB 232763).

The Company's shares are listed at the Regulated Unofficial Market (Scale segment) of the Frankfurt Stock Exchange. Mynaric AG was not capital market oriented as defined by § 264d of the German Commercial Code (HGB) on the balance sheet date.

Mynaric AG prepares these consolidated financial statements on a voluntary basis. The size criteria for mandatory preparation in accordance with § 293 HGB were not exceeded on the balance sheet date and on the previous balance sheet date.

These consolidated financial statements were prepared in accordance with §§ 290 et seq. of the German Commercial Code (HGB) and in accordance with the relevant provisions of the Stock Corporation Act (AktG).

The income statement was prepared in accordance with the total cost method § 298 para. 1 in conjunction with § 275 para. 2 HGB.

The consolidated income statement for the 2017 financial year comprises the income statements of Mynaric Lasercom GmbH and Mynaric USA, Inc. for the financial year from 01 January to 31 December 2017 and of Mynaric AG for the period from 18 April to 31 December 2017 and provides a suitable basis for comparison with the consolidated income statement for the 2018 financial year. The consolidated income statement for the 2017 financial year was not audited.

The financial year corresponds to the calendar year.

As the parent company of the Mynaric Group, Mynaric AG holds all shares in Mynaric Lasercom GmbH, Gilching, as well as in Mynaric USA, Inc., Huntsville/USA. The subsidiaries provide research and development services as well as services in the field of laser communication technology. Mynaric Lasercom GmbH started the serial production of laser communication products in the financial year 2018. Mynaric AG finances the business activities of its subsidiaries and their development through contributions to equity and the provision of shareholder loans.

According to the Mynaric Group's business plan, revenues from product sales will increase significantly over the next few financial years and ultimately generate net cash inflows from operating activities. Cash and cash equivalents as of the balance sheet date and inflows from the capital increase from authorized capital on 18 March 2019 are sufficient to cover the financial requirements that arise in the meantime.

### 2. CONSOLIDATED GROUP COMPANIES

The consolidated financial statements include the following domestic and foreign subsidiaries directly controlled by Mynaric AG:

SUBSIDIARY COMPANY	SHARE IN CAPITAL (PERCENT)	EQUITY OF THE SUBSIDIARY COMPANY*	NET LOSS OF THE YEAR 2018* TEUR
Mynaric Lasercom GmbH, Gilching (Germany)	100	2,471	-4,188
Mynaric USA, Inc., Huntsville (USA)	100	-2,120**	-1,127***

\* Disclosures according to HGB or local accounting regulations.

\*\* Valued at the average spot exchange rate from 31 December 2018.

\*\*\* Valued at the average rate from 01 January 2018 to 31 December 2018.

The balance sheet date of all companies included in the consolidated financial statements is 31 December.

### 3. CONSOLIDATION PRINCIPLES

The capital consolidation is based on the revaluation method pursuant to § 301 para. 1 HGB. As part of the capital consolidation of the fully consolidated subsidiaries, the book value of the investment is offset against the fair value of the assets less liabilities at the time of acquisition. Any remaining asset-side differential amount would be presented as goodwill and amortized on a straight-line basis over its expected useful life and, if necessary, also on an unscheduled basis. The consolidated financial statements were prepared initially for the previous 2017 financial year. The valuations of the assets and liabilities of the consolidated subsidiaries on which the capital offsetting is based are the valuations at the time the subsidiaries were first included.

The debt consolidation is carried out in accordance with § 303 (1) HGB by eliminating 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 in whole or in part on deliveries between companies included in the consolidated financial statements are recognized in the consolidated financial statements at their group acquisition or production costs (elimination of intermediate company results).

Expenses and income are consolidated in accordance with § 305 para. 1 HGB by offsetting the income from deliveries and services between the group companies against the expenses attributable to them, unless they are to be shown as an increase in finished goods and work in progress or as other own work capitalized. Interest income and similar income are offset against the corresponding expenses.

Deferred taxes are recognized for differences between the values in the commercial balance sheet and the tax balance sheet resulting from the consolidation of capital, liabilities, expenses and income as well as from the elimination of intermediate company profits and losses, to the extent that their effects are expected to reverse in subsequent years. Deferred taxes are calculated on the basis of an income tax rate of 28%.

### 4. PRINCIPLES OF CURRENCY CONVERSION

#### Conversion of items in the annual financial statements denominated in foreign currencies

Insofar as the individual financial statements contain items which are denominated in foreign currency or were originally denominated in foreign currency, they were converted into euros on the basis of the exchange rate at

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

the time of the transaction. Balance sheet items are converted at the average spot exchange rate on the balance sheet date. Unrealized exchange gains are not taken into account if the remaining term is more than one year.

### Conversion of financial statements denominated in foreign currencies

Individual financial statements in foreign currencies are converted using the "modified current rate" method. With the exception of equity, balance sheet items are converted at the closing exchange rate on the balance sheet date, while equity is converted at historical rates. Income statement items are converted at the average exchange rate for the financial year. Any resulting difference from currency conversion is shown as such separately in equity without affecting income.

### 5. ACCOUNTING AND VALUATION PRINCIPLES

The annual financial statements of the companies included in the consolidated financial statements have been prepared using uniform accounting policies.

The accounting and valuation methods applied in the consolidated financial statements are presented below. The consolidation methods and accounting and valuation principles were applied consistently with respect to the comparative figures for the previous year.

The preparation of the consolidated financial statements is based on the going concern principle.

**Intangible assets as well as property, plant and equipment** are valued at acquisition or production cost less scheduled and - where necessary - unscheduled depreciation. The Group has exercised the option under § 248 para. 2 in conjunction with § 255 para. 2a HGB and recognized internally generated intangible assets. Internally generated intangible assets have already been capitalized at the level of the subsidiaries. The cost of internally generated intangible assets includes the expenses incurred for their development.

Depreciation is calculated using the straight-line method over the expected useful life of the asset. Additions in the financial year were depreciated pro rata temporis for the full month of acquisition and for the following months.

The acquisition or production costs of development projects are amortized from the date on which the respective projects are completed or from the earlier date of use.

Assets with acquisition costs of up to EUR 250 (previous year EUR 150) are recognized in full as expenses under other operating expenses in the year of acquisition. Assets with acquisition costs between EUR 250 (previous year: EUR 150) and EUR 800 (previous year: EUR 410) are depreciated as low-value assets in the year of acquisition. Fixed values for tools, laboratory & test equipment and work clothing are still included in fixed assets.

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

**Work in progress** is reported in the balance sheet at production cost, taking into account loss-free valuation. Production costs include direct material and material overhead, direct manufacturing and production overhead, as well as depreciation of fixed assets and reasonable amounts of administrative expenditures. The cost of conversion does not include any interest on borrowed capital.

**Receivables and other assets** are valued at acquisition cost or the lower present value. Discounting to the lower present value was not necessary.

**Cash on hand and bank balances** are valued at nominal value.

**Prepayments and accrued income** include expenses incurred prior to the balance sheet date which represent expenses for the period after the balance sheet date.

**Provisions** take into account all identifiable risks and contingent liabilities. They are recognized at the settlement amount required in accordance with prudent business judgment.

**Liabilities** are valued based on the settlement amount.

**Deferred taxes** are recognized on the basis of the temporary concept. Accordingly, a deferred tax liability is recognized in the respective financial statements of the consolidated companies if there are differences between the valuations of assets, liabilities and deferred income under commercial law and their tax valuations which are expected to decrease in the future, and a tax burden results therefrom. If the different valuations result in tax relief, deferred tax assets from other valuation differences are taken into account up to a maximum of the amount of deferred tax liabilities. Any excess of deferred tax assets over deferred tax liabilities is not capitalized.

### 6. NOTES TO THE CONSOLIDATED BALANCE SHEET

**Intangible fixed assets** include TEUR 5,014 (previous year: TEUR 1,109) in production costs for development projects. These mainly consist of the manufacturing costs of the satellite terminal amounting to TEUR 3,663 (previous year: TEUR 739) and the manufacturing costs of the air terminals amounting to TEUR 918 (previous year: TEUR 213). There was no amortization of development costs in the financial year.

**Property, plant and equipment** includes technical equipment and machinery amounting to TEUR 748 (previous year: TEUR 499) and operating and office equipment amounting to TEUR 357 (previous year: TEUR 306). Advance payments on account and assets under construction amounting to TEUR 1,346 (previous year: TEUR 0) mainly relate to investments in the rented new company building, which will be occupied in 2019.

**Work in progress** mainly includes optical ground stations in production with a value of TEUR 1,620 (previous year: TEUR 292).

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

The **other assets** consist mainly of sales tax receivables in the amount of TEUR 280 (previous year: TEUR 304) and security deposits for rental guarantees in the amount of TEUR 106 (previous year: TEUR 1). Items with remaining terms of more than one year amount to TEUR 106 (previous year: TEUR 1).

The **cash and cash equivalents** reported in the amount of TEUR 15,236 (previous year: TEUR 28,448) consist of cash and bank balances.

The Company's **share capital** amounts to EUR 2,704,304 and is made up of 2,704,304 unregistered bearer shares with a par value of EUR 1 per share.

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

The **capital reserve** includes an amount of TEUR 31,695 (previous year: TEUR 31,965) of additional payments in the 2017 financial year via the issue price of the no-par value shares in accordance with § 272 para. 2 no. 1 HGB. In addition, the capital reserve includes an amount of TEUR 5,647 (previous year: 5,647) that was transferred from negative goodwill with equity character to the capital reserve for technical reasons. This negative goodwill resulted from the transfer of the shares held in Mynaric Lasercom GmbH to Mynaric AG in 2017.

**Other provisions** include in particular provisions for personnel of TEUR 816 (previous year: TEUR 423), legal disputes of TEUR 245 (previous year: TEUR 0), financial statement and audit costs of TEUR 69 (previous year: TEUR 48), remuneration of the Supervisory Board of TEUR 35 (previous year: TEUR 11), renovation costs of rental space upon move-out of TEUR 30 (previous year: TEUR 0), warranties of TEUR 22 (previous year: TEUR 14) and other provisions of TEUR 93 (previous year: TEUR 139). Provisions for warranties are recognized for legal and de facto obligations to customers.

**Trade payables** have remaining terms of up to one year. Of the TEUR 1,270 (previous year: TEUR 756) in trade payables, TEUR 697 (previous year: TEUR 0) relates to liabilities in connection with investments in the new office and company building.

**Other liabilities** are due within one year of the balance sheet date. Other liabilities primarily include tax liabilities of TEUR 103 (previous year: TEUR 209) and social security liabilities of TEUR 21 (previous year: TEUR 16).

Deferred tax assets were recognized up to the amount of the deferred tax liabilities to be recognized. Deferred tax liabilities result from the capitalized costs of development projects. Deferred tax assets result from tax losses carried forward. Due to the offsetting of these balance sheet items, they are not reported and there is no impact on equity. The calculation was based on an average tax rate of 28%.

### 7. NOTES TO THE CONSOLIDATED INCOME STATEMENT

**Revenues** include investment grants of TEUR 227 (previous year: TEUR 328) from subsidized projects.

The other **own work capitalized** in the 2018 financial year amounting to TEUR 3,906 mainly includes the production costs of the development projects "Satellite Terminals" amounting to TEUR 2,924 and the "Air Terminals" amounting to TEUR 705.

The **other operating expenses** for the reporting period are as follows:

OTHER OPERATING EXPENSES	2018 TEUR
Administrative expenses	1,313
Operating expenses	1,092
Sales expenses	810
Other	617
<b>TOTAL</b>	<b>3,832</b>

The administrative expenses comprise the expenses for insurance, maintenance, communication, training, consultants, lawyers or notaries. Operating expenses contain all expenses necessary to maintain business operations, primarily rent and ancillary costs as well as IT costs and freight. Sales expenses include marketing expenses and travel expenses.

### 8. OTHER INFORMATION

#### Other financial obligations

Other financial obligations amount to TEUR 10,085, of which TEUR 1,224 relate to 2019. The major part is due to a 10-year rental agreement for the period from May 2019 to April 2029 in the amount of TEUR 9,045.

#### Employees

The Mynaric Group employed an average of 73 people during the year, comprising 16 employees of Mynaric AG, 51 employees of Mynaric Lasercom GmbH and 6 employees of Mynaric USA Inc. Management board members and managing directors are not included in the number of employees.

#### Corporate bodies

The Management Board of Mynaric AG consisted of the following members in the 2018 financial year:

- Dr. Wolfram Peschko (Dr. rer. nat.), Gauting, Chairman
- Dr. Markus Knapek (Dr.-Ing.), Munich
- Mr. Joachim Horwath (Dipl.-Ing.), Gilching

In 2018, the Supervisory Board consisted of the following persons:

- Dr. Manfred Krischke, Chairman, CEO Cloudeo AG
- Mr Hans-Christian Semmler, Deputy Chairman, Managing Partner of HCS Beteiligungsgesellschaft mbH (until 17 July 2018)
- Dr. Gerd Gruppe, member of the Supervisory Board (until 23 October 2018), Deputy Chairman (from 24 October 2018), retired member of the DLR Space Management Executive Board
- Dr. Harald Gerloff, member of the Supervisory Board (until 23 October 2018), Deputy Chairman (from 24 October 2018 until 31 December 2018), CEO Netmedia AG
- Mr. Rony Vogel, entrepreneur and investor (until 17 July 2018)
- Dr. Thomas Billeter (from 17 July 2018) Investor and Business Angel
- Mr. Müller-Brühl (from 17 July 2018) COO GreenCom Networks AG

#### Total remuneration of the bodies

Pursuant to § 314 para. 3, sentence 2 in conjunction with § 286 para. 4 of the German Commercial Code (HGB), information on the total remuneration of the Management Board is not provided.

The total remuneration of the Supervisory Board for the 2018 financial year amounted to TEUR 65.

#### Group auditor's fees

The group auditor's fee for financial year 2018 amounts to TEUR 40 and is related only to audit services.

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

### SUPPLEMENTARY REPORTING

The Management Board members Dr. Markus Knapek and Joachim Horwath stepped down from the Management Board on 13 March 2019. On the same day, Mr. Bulent Altan (Master of Science in Aerospace) and Mr. Hubertus Edler von Janecek (Dipl.-Ing.) were appointed as new board members.

On 18 March 2019, the Company concluded an investment agreement to increase the share capital by EUR 200,000, broken down into 200,000 unregistered bearer shares with a nominal value of EUR 1 per share from the authorized capital, excluding subscription rights. TEUR 10,800 was allocated to the capital reserve. The Supervisory Board approved the capital increase on the same day. Cash and cash equivalents are expected to be deposited in April 2019.

### PROPOSAL FOR THE DISTRIBUTION OF PROFIT

The Management Board proposes to carry forward Mynaric AG's retained loss of EUR 4,525,316.28 consisting of the loss carried forward of EUR 2,958,787.87 and the net loss for the year of EUR 1,566,528.41, to the new account.

Gilching, 24 April 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 December 31, 2018 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, May 20, 2019

#### The Management Board





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Published by  
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