# Mynaric 2022 Analyst & Investor Day

Thursday, 28th April 2022

# Introduction

Tom Dinges

*Vice President of Investor Relations, Mynaric*

**Welcome**

Welcome everyone to Mynaric's 2022 Analyst and Investor Day conference call and webcast. We released our 2021 Letter to shareholders on Form 6-K including preliminary fiscal year 2021 results. The letter is also available for download on the Investor Relations section of mynaric.com.

**Disclaimer**

Before we begin today's presentation, I must remind you that this presentation and oral statements regarding the subject of this presentation include forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 as amended. All statements other than statements of historical or current facts contained in this presentation are forward-looking statements.

These forward-looking statements involve known and unknown risks, uncertainties and assumptions that are difficult to predict or are beyond our control and actual results may differ materially from those expected or implied as forward-looking statements. The forward-looking statements included in this presentation are made only as of the date hereof. Neither we nor any other person undertakes any obligation to update any forward-looking statements to reflect events or circumstances after the date of this presentation or otherwise.

We have not yet completed preparation of our financial statements for the year-ended 31st December 2021. The information presented herein is preliminary in nature and is subject to change, including as a result of any normal adjustments resulting from completion of procedures in relation to the financial statements for the financial year 2021. There could be no assurance that the final results for these periods will not differ from these preliminary results and any such differences could be material. Financial results for the fiscal year 2021 will be included in Annual Report on Form 20-F to be filed with the Securities and Exchange Commission.

With that out of the way, we have a great agenda for you today, including a deep dive into our vision and strategy, our ability to produce at scale, many customer success highlights, as well as the discussion of our preliminary 2021 financial results and our outlook for 2022.

With that, let me turn it over to Bulent for his opening remarks. Bulent?

# Vision & Strategy

Bulent Altan

*CEO, Mynaric*

**Welcome**

Thank you, Tom, for leading us in, and thank you, everyone, for joining our Analyst and Business Update Call. I am Bulent Altan, I am the CEO of Mynaric. And with me today, I will

have some exciting speakers from the company. Amongst others, we will have Joachim Horwath, our CTO and Founder of Mynaric. We will have Tina Ghataore, who is our Chief Commercial Officer; and Stefan Berndt-von Buelow, who is our Chief Financial Officer. And we will present in that order our presentation for today about what has happened and what we are looking forward to.

Some of you may be new to Mynaric. Some of you, I am sure we have met or at least talked to in the last couple of years. But for the people who may be new to the company, I would like to start with our vision and strategy and maybe talk a little bit about what really makes Mynaric, what drives us, why we exist. If you could go to that slide?

**Vision: Why we exist**

To talk about why Mynaric exists today? We are all here in Mynaric with the vision that we share for our company, which is to eliminate the barriers of connectivity. On the barriers of connectivity, we understand that we need to connect everyone and everything, and that is the vision that Mynaric enables for everyone.

And we do that with the purpose of ensuring secure and unrestricted flow of information for everyone, may it be for personal use, for governmental use, for military use, defence use, may it be for devices that need to be connected everywhere. We are in the age of industrial internet of things, regular internet of things. We are in the age of needing information everywhere we live, travel or may exist. And we want to ensure that it can happen in the most secure and unrestricted way. And the technologies we develop in Mynaric really allow our customers to deploy systems that really get communication into every nook and cranny of the world.

With that, what we want to do is close the digital divide that exists today between places that have communication and between places that do not, and people who have it and people who have not.

Today, we live in a world where four billion people are still either unconnected or underconnected, and our technologies and our customers that deploy these technologies really move us towards that.

Our markets are diverse. We serve both government military purposes as well as commercial, and we are going to talk about how that is developing over the next couple of slides.

**Total addressable market set for multi-decade growth**

We look into the addressable market set that Mynaric serves. And as I have said, we have both the governmental and the military side of it and the commercial side to it. The commercial side comes from telecom services. And the two, the government and the commercial side combined, represent a $4 trillion-plus end market that we serve.

When you look into the segments that we enable within that market and which can be served by optical communication, by laser communication and then look into what those segments actually spend in air and space communications equipment alone, today, we have a total addressable market of $20 billion-plus.

That is in itself going towards the optical communication side. As optical communication penetrates that total addressable market, what we are seeing today, and that is represented

on the left side, is that the early adopters of this technology are coming in government. And you are going to see that the way our backlog has been building over the last year. It is coming from the government where Mynaric is capable and has been able to represent what the company can do in deploying early adopter systems and really winning contracts.

From then on, we are seeing that the commercial players that exist in the world that are deploying either mega constellations or orbit observation constellations, broadband constellations that they are betting on the same people that the government is also putting their seal of approval on.

And after the broadband markets, we are seeing a very diversified set of customers now forming that even go beyond just the air and space and ground station segment, and we have seen all other mobility devices looking into optical communications for their needs.

**Number of constellation satellites grew 10x over the last two years with continuing trendline**

Then unpacking maybe a little bit the space market and its growth in that, and how these optical communication constellations are really representing for Mynaric a very fast-growing opportunity. We have to look into the way that satellites have been deployed until very recently and how that has changed in a very short amount of time.

Then we look back in just a little over two years ago. We see a picture of space, where there were only 1,900 active satellites in orbit. A very short amount of that were active communication constellation satellites. In just two short years, that number has increased to almost 5,000, a growth for the constellation side, I think of more than 10x. And those constellation satellites have mostly come from broadband communication constellations, which are in itself the natural customer for optical communication technologies that need high bandwidth and secure communication between multiple different satellites.

And this is just a tip of the iceberg. When you look into the current filings in the ITU, FCC and any other organisation, you see a tremendous growth happening over the next decade. And we know that the communications constellation are growing another 10x from here and the projected about 100,000 or even more satellites are mostly our communication constellation, again, with a large need for optical communication constellations. And this is what Mynaric has been preparing itself to. And this is what we are going to talk about today.

This is the start of the momentum that is building itself over this last year and also in 2022, that is getting Mynaric the markets to address and the opportunities to place its product.

**Momentum building**

I think one of the words you are going to hear today very often is momentum building and momentum. If you look into the history of Mynaric, we are a 12-year-old company that have been preparing technology, IP and a company that can really deliver it for a time where we know that this technology was going to be needed. We knew that constellations were coming. We knew that optical communications is going to be the backbone of world's communication capabilities, especially when it is developed from aerospace, and we were getting ready for prime time. And what we will show you today is that the prime time has arrived.

Where we were just talking about singular customers until 2021, since the beginning of 2021, we have steadily grown our backlog.

What started with our Telesat DARPA enrolment in the US now has borne fruit. And over the last year and a few months, we have been able to sign prestigious customers such as the Space Development Agency, SpaceLink, Capella Space, Northrop Grumman multiple times, DARPA multiple times, and the European Space Agency, building up a backlog, both in commercial and in governmental applications, really showing the fact that optical communication, when it arrives, is coming in a very large way.

**Serial production in scale facility**

How has the company prepared itself for the sudden arrival of customers? What we have done is we have prepared a company that can do serial production in scale. When we think about the space industry, serial production has really not been a focus of it in the past.

What that meant is for Mynaric to be successful in addressing a market that needs tens of thousands, if not hundreds of thousand terminals in the future per year, we need to start thinking new. That meant building facilities ahead of time for a market that will need products in mass manufacture. That meant investing our assets into building the world's first dedicated serial production facility for laser communications.

This facility just built outside of Munich. It was a facility we built up really quickly and now is ready for customers to come in, which they are coming in right now and is ready to build more than 2,000 terminals a year to be able to meet that backlog with a certainty of execution.

This facility is not just there to meet the backlog. It is also a way to show to our customers that Mynaric is dedicated to support their mission with certainty that we have made the investments, that we are ahead of the demand curve and that we can deliver the products they need on time. And very often, it is the customers' visits into this production facility that convinces them of Mynaric's strength and capabilities to deliver what they need.

**US Expansion**

What it also meant is increasing our footprint, where our main customers are, and that was for us, the United States. Being a German company, having a large US presence was very important to do the business development and the support that our customers need and be able to close the major contracts that we have been able to close.

The company today has more than 35 people working in the US. And we have started in what was first only in Los Angeles as an office, now also is represented, since February 2021, in Washington DC, where we do our government outreach and government support.

We also have expanded the US team quite significantly last year. That number, that is more than 35 people, used to be about 10 at the beginning of 2021. And we can see that we are really working on hiring top talent in the US to make sure that we are matching the needs of our customer and the questions of our customer, be that top talent and a top team that can support them from the US.

What that US location also gets us is participation in different events and making sure that we are in the talk at all times. And that ensures that we are a part of the conversation. We can participate in things like standard setting such as the one that is Space Development Agency

is doing to make sure that we are performing and seen as a key player, not just in Europe but also in the US.

**NASDAQ IPO**

Another event from last year, which I think is a highlight, is our initial public offering from NASDAQ. We were already a publicly-traded company in the German Stock Exchange. But knowing the familiarity with the space sector and the access to capital that the US markets offer, we have decided that being listed in NASDAQ is advantageous for Mynaric, and we have, as such, decided to do an IPO in NASDAQ. And now we are a dual-listed company with the tickers M0Y and MYNA.

And we are quite excited about to have done this on the end of last year with a gross proceeds of US$75.9 million, which we are once again investing into our R&D, but mostly also into our production and scale-up capabilities, as well as our business development team.

**Strategy: Laser Communication. Made scalable**

Mynaric's strategy from the start has always been very clear. We wanted to have serially produced terminals. We want mass production, not onesie-twosie, things that do very few things in space that are scientific in nature. We want serially produced products in the hands of our customers that want to connect the world, and because of that, they need it in the thousands.

This is a telecom play, more than a space play or an aviation play. We focus on scalability throughout the product life cycle, and we build capabilities before they are needed.

For us, affordability is a very big target, and one we have been always able to achieve. We do that by the cost reduction as our core activity, starting from engineering, really focusing on the technology that allows a cost reduction that can be mass produced, and that allows our customers that look beyond a few terminals into the thousands of terminals for their purposes to be able to afford our products.

For us, reliability and simplicity is another thing. We are constantly iterating on our products, always making it more compact, more reliable, more simpler to use. And we do that also, as Joachim will talk in just a second about our technology, we do that with testing, testing and more testing and then deploying out onto the field.

And the last column that we build on is standardisation. We work on our terminals as much as we build on standards that allow us to communicate to any system out there. We see interoperability between terminals from multiple different operators as a key, and it enables those that interoperability by being one of the main architects of standards that exist out there for optical communication terminals.

And we also utilise maximum flexibility in our terminals by making our terminals very flexible. We ensure that our customers can do their use case regardless of what it is from our main commercial off the shelf product without us having to reengineer anything.

With that, I would like to close out our Strategy & Vision session, and I would like to hand the word over to our CTO, Joachim Horwath, who is going to do more of a deep dive into these columns that I have just talked. Thank you very much. Joachim?

# Scale

Joachim Horwath

*CTO & Founder, Mynaric*

**Serial Production: World's first dedicated facility**

Thank you, Bulent. Yeah. The market for free space optical communication is here now. The numbers will only increase. So that is why optical communication is being addressed by multiple companies today, but only Mynaric has a scalable mass producible solution and a mass production capabilities to match it with, because we have put over a decade worth of investments in research and development.

You can see there is a shop floor with logistics, quality assurance, warehouse, electronics, integration facility. We have an area where we do the subsystems like fast-steering mirror and coarse pointing assemblies. We have our optics production I am going to talk about soon. And we have our final assembly in the middle with the acceptance test, what we do there.

**Affordability: Insourced optics production**

The optical telescope for our terminal is the most important building block when it comes to cost-efficiency because of the high-quality we need because we coupling to the fibre. So what did we do? So first, we identified the right material. So we evaluated everything what was out there like glass and ceramics and concluded that metal optics out of aluminium is the best solution for this application.

This is a cheap material that allows wavelength independent high-quality operation over a large temperature range, is isothermal because the holding structure is out of the same material, and it is fully demisable, which is very important for space, since after the lifetime when the satellites come down, they need to be demisable.

Second, we look then after we have chosen a material for potential manufacturing partners, and there was no cost-efficient solution with the required capacity out there that would produce thousands of telescopes per year, that is why in-sourcing of the metal telescope production was key to the affordability and scalability effort and gives us, on top of that, a better handle on quality and reaction to market demand.

**Affordability: commercial electronics for space**

The next important pillar for affordability is the electronics. Traditionally, in space, radiation hardened electronics was used and that is very expensive, and sometimes not the latest technology is available with the highest speed what we need for our very high data rates. Therefore, we qualify commercial electronics for space. That is very important because not all electronics works in space and quite some electronics fails, which is even patch or dye revision-dependent.

That is why we do lots of tests. We start with total ionizing dose tests, where we look how the electronics work under gamma rays. We do proton tests at quite high flux as up to 200 mega-electron volt to see if there are any destructive or non-destructive latch-ups. And last but not least, heavy ion testing, where we can even deposit more energy into the electronic

parts and see if there are any issues, or if they break. And that makes this solution very, very cost efficient, but it is an effort to do but we are committed to do so.

**Affordability: Material cost reduction of products**

Affordability. We are a mass production-oriented through iterations of technology and through economy of scale. And we have been able to already reduce the unit cost by 80% going from CONDOR Mk1 to CONDOR Mk3 and now with the serial production ready CONDOR Mk3 terminal. So at a mass production and vertical integration should bring it even to half of that.

**Reliability: Extensive product testing**

Reliability for our products is key. To have the highest reliability and also the capability to innovate on our products, we need to have subsystems and targeted testing and full system test.

On the lower right-hand, you see the optical metrology, where we test every mirror and the final telescope. On top of that, there is our thermal vacuum chamber, how we simulate space and see that the terminals work out through the whole thermal range. Left to that is our hexapod test platform with the HAWK aviation terminal, where we simulate base motion disturbance of aircraft and whatnot. Right below, we have vibration tables with our terminals on it, where we simulate rocket launches and rough aircraft flights. And of course, also thermal chambers where we can see that the whole temperature range is okay with our products.

**Simplicity: Outdoor and flight campaigns**

For aviation links, we go with our systems into the real scenario. We have different aircrafts available. We have partners with L3 Mission systems with the G 520 aircraft that can go up to the stratosphere, where we can test the whole range of our products. Whenever we improve something on the system, we go back and test and test. We always say we do not want to ship new products to customers if we have not done everything with or to the products that the customer might do this or to the product.

**Standardisation: Interoperability lab**

For space, there is a very special piece of equipment, where we can test the terminals, like in space. It is called the Link Testbed. And we are a company that simulates space better than anybody else. So we can put the terminals in this testbed. They see the same micro vibrations like on the satellite. They rotate that simulates the orbit motion and the satellite manoeuvres, and we have a sophisticated optical system that simulates the 8,000 to 35,000 kilometres. And that really guarantees that everything works in the target scenario.

Let me now hand over to my colleague, Tina. She will talk about customer success highlights. Tina, please.

## Customer Success Highlights

Tina Ghataore

*CCO, Mynaric*

**Typical space programme lifecycle**

Thank you, Joachim. Hello, everyone. I would like to walk you all briefly through our sales and BD activities, starting with the typical timeline from targeting opportunities to booking deals, and finally, the delivery of our products. As Bulent mentioned earlier, we have truly been building momentum across a number of fronts.

As you can see in this slide, working to close a deal on a space programme can have a prolonged period. This varies depending on if we are engaged with a commercial customer or a government programme. Commercial opportunities tend to have a more fluid, shorter time line from when we engaged in an opportunity to closing a deal.

The typical request for information or request for proposal is sometimes bypassed or less formal. On government opportunities, we often see a lead-up of engagement with customers to make sure we receive the request for information, typically a six-month engagement. Once our initial proposals are submitted, our confidence in receiving the request for proposal increases.

The more engaged we remain with these customers on Q&A, showcasing our capabilities beyond our product, scalable manufacturing, for example, the better chance we have. In many cases, we work through leading aerospace primes, so this process can be a longer process.

Our terms for our contracts are defined upfront during the proposal process. So on average, we are able to secure about 50% of the contract value or cash-in from award through to the integration phase of the programme. The remainder of the contract value comes at product delivery to the customer, after which we are able to recognise the revenue.

**Highlight: SDA interoperability**

I wanted to share some of the highlights of our customer engagements in 2021 and to-date, with some of the contracts that we have executed.

2021 was a crucial year for us to engage with key stakeholders in the adoption of optical communications products. As Bulent mentioned earlier, the Space Development Agency here in the US is really leading this effort in adopting this capability for their planned large constellations.

Our teams have been engaged closely with the SDA to establish the standard by which the optical communications from different vendors communicate with one another. Mynaric was one of the first to prove out our product complied with this standard when we completed the required tests at the Naval Research Lab. This is a great achievement for us.

**Highlight: Telesat Programme**

Our engagement with the Telesat government systems' team continued in 2021 for the DARPA Blackjack programme. This programme for us is a stepping stone to engage further on advanced capabilities on optical communications, and we continue to build close working relationships with the Telesat government systems' team and other players involved in this

programme. We have been delivering product during earlier milestones and final flight models will be delivered soon for an anticipated launch later this year.

**Highlight: Data relay service in space**

2021 was also a year to engage with commercial customers planning various constellations. Our success in the market with the Space Development Agency standard and securing the DARPA programme gives confidence to commercial players like SpaceLink, who are planning a data relay service using the Medium Earth Orbit to connect with their customer satellites in the Lower Earth Orbit. Customer satellites can be earth observation, communication satellites.

**Highlight: Earth Observation from space**

In 2021, we secured a contract with SpaceLink to deliver Medium Earth Orbit terminals, as well as our CONDOR Mk3 product for their Lower Earth Orbit customers.

With the introduction of the CONDOR Mk3 product in summer 2021, and the full thrust efforts to engage with customers, communities, both government and commercial, we are excited to have secured Capella Space as our launch customer for CONDOR Mk3. Our delivery to this customer is planned for the end of this year. We are excited to broaden our customer base and also a diverse set of applications that will benefit from adopting optical communication terminals within the networks.

**Highlight: Northrop Grumman partnership**

Throughout 2021, our engagement with prime contractors continued and our relationship with Northrop is a key highlight. The team at Northrop dug deep into our technical capability, our ability to execute programmes at the scale needed, and most importantly, our agility and innovation. This led us to a strategic partnership we announced around the space domain.

We secured contracts with Northrop for CONDOR Mk3, and now we will continue to work on a variety of pursuits together during this five-year term of our strategic partnership.

**Highlight: DARPA Space-BACN programme**

As mentioned previously, the DARPA Blackjack programme was a stepping stone to our engagement with the DARPA team. Our most recent engagement is a selection of Mynaric as a key supplier for the Space-BACN programme. This programme is focused on the development of a universally interoperable product with aggressive price points.

The initial Phase 0 programme is a study to work on the architecture design of the next-gen terminal.

**Highlight: Ultra high-speed communication**

Our wins continued this year with the award of a European Space Agency programme, where we are looking at per terabit per second communication capabilities. The first step in this programme is to design, build and test the laboratory model of this terminal, continuing on our capabilities of innovating in this technology.

**Highlight: Northrop Grumman order**

The significant efforts of our team over the course of 18-plus months paid off recently with the award of the Space Development Agency Tranche 1 Transport Layer programme. Northrop Grumman was selected by the SDA, and we are part of this winning team and have

secured the largest contract to date for Mynaric, very excited to be part of this programme as it offers capabilities around larger constellations and subsequent tranches.

**Highlight: Industry recognition**

Industry recognition is always key to the success of any company. 2021 and 2022 so far has had us recognised by Euroconsult as well as ViaSatellite, leading organisations of our industry, recognising Mynaric and our teams' capabilities in really moving technology into products, into networks of the future.

And now I would like to hand over to Stefan to go over our financials.

## Preliminary FY21 Results

Stefan Berndt-von Buelow

*CFO, Mynaric*

**FY21 key figures**

Thank you, Tina. Good afternoon to the audience. Let us turn to our preliminary results for the fiscal year 2021. We released our preliminary results for the fiscal year 2021 earlier this evening. We anticipate filing for Form 20-F beginning of next week.

I want to highlight a couple of items in our preliminary results that we believe best represents the customer and programme momentum, Bulent and Tina spoke to in the terms of our financial results.

First, total revenue increased by more than 240% in 2021 compared to 2020. We are still at a very early stage of revenue recognition as we look to accelerating product shipments this year and the coming years. Again, strong momentum that we believe positions us very well for further gains in revenue in 2022 and beyond.

Second, cash-in from customer contracts increased by 109% in 2021 compared to the previous year. This is the cash we received from our customers as we achieved specific contractual milestones as we move from contract awards to production and to product delivery over a multiyear period, as Tina walked you through earlier.

For comparison, two years ago, we had relatively no cash-in customer contracts. So we are showing a very strong momentum as we continue to execute for our customers.

So we go to the key figures in the income statement, looking at a few other preliminary figures. We continue to invest at a strong pace in product development. This includes both investment to existing products and investment in next-generation products. The cost of purchased material increased by 72% in 2021 compared to 2020, as product levels increased and also we are producing more terminals for internal testing purposes along with units for customer demonstration.

Personnel costs increased 39% in 2021 compared to 2020. As we continue to add talent to our team, we have expected our capability across the divisions of the company in 2021 and will continue to do so in 2022.

Overall, the company report an operating loss in 2021 that more than doubled compared to 2020 due to the higher investments we made in people, equipment and system in preparation for strong growth in 2022 and the start of the production of laser communication terminals.

Key figures from the balance sheet. Now let us turn to a few key balance sheet highlights. Property, plant and equipment at the end of 2021 was approximately €17 million, up from €10 million in 2020. As we continue to invest in capacity and capability ahead of the expected significant ramp-up in optical communication terminal production in the coming years.

Inventories were €8.5 million, up from €8.2 million in 2020, as we continue to invest in component inventory ahead of the expected significant ramp in communication terminals products in the coming years. Our cash balance at the end of 2021 was more than €48 million, up from €43 million at the end by 2020 and up from €18 million at the half of the year 2021.

In November, we raised, as Bulent mentioned, close to US$76 million or €71 million with our NASDAQ IPO. And we are now a dual-listed company in Germany and in the US. We welcome many new shareholders with the IPO. In 2022, we remain in investment mode and as a pre-breakeven company, we expect our cash balance to decline in 2022.

**Outlook: key business metrics**

Now to the outlook. Let us turn to the two key business metrics we are focused on for 2022 that we believe will continue to demonstrate the momentum we are seeing in the business.

First, cash-in from customer contracts. This is a key forward-looking predictor of revenue as the cash is only received as we lead contractual milestones. As Tina walked you through earlier, there is typically a lag between cash received from customer, contracts and shipments. This varies depending on the contract terms.

Second, optical communication terminal backlog in units. We believe this is the most important forward-looking metric for our business. We saw incredible growth in this metric in 2021 compared to 2020. And we have already seen this momentum continue up through today.

**Cash-in from customer contracts**

Cash-in from customer contracts. We saw great growth here of over greater than 100% in 2021 compared with 2020 as cash payments were received from the numbers of customers in 2021. These are contractual payments received when certain milestones are met, but full delivery and acceptance has not been reached.

In essence, this is pre-revenue cash receipts, and we believe a very significant indicator of the future revenue of the company. We expect cash-in from customer contracts reaching more than €20 million in 2022, up from less than €4 million we reported for 2021. Again, very strong momentum in the business, demonstrated by our ability to achieve contractual milestones.

**Optical communications terminal backlog**

Backlog. We report a more than tenfold increase in backlog of optical communication terminals to 40 at the end of 2021 compared to 2020. Furthermore, we can announce that

until today, we have already achieved a fivefold increase of our terminal backlog to 211 units in the last four months.

I really want to highlight that that we were able in the last four months to increase the number from 40 units to 211 units. This was driven by a strong focus by our team and execution and turnkey development and test milestone reached over the course of 2021.

We now have a strong pipeline of prospective customers for our terminal products. And as Bulent showed earlier during his opening remarks, we believe the momentum into 2022 continues at a very strong pace, and we expect these metrics will continue on a very strong trajectory throughout the remaining of 2022 as we continue to win new business from new customers and existing customers give us follow on their orders. So strong momentum once again.

And with that, I give it back to Bulent for the brief closing remarks. Thank you.

## Conclusion

Bulent Altan

*CEO, Mynaric*

**Summary**

Well, thank you, Stefan for those remarks and the presentation.

So as we wrap up, what have we shown you today? What are the key takeaways? In short, today it was all about growth and momentum. When we talk about growth and momentum, we are not merely speaking in terms of double-digit or even triple-digit growth, like you may see reported in other growth companies. But rather, we are talking about growth that is 4 times, 5 times in very short order. Look at our order backlog as one example of this.

Now I have been in the space industry for two decades. I have seen what growth of this magnitude looks like, and more importantly, what it takes to capitalise on that growth. Mynaric is the only company with the ability to do that, to do what we do at scale. That gives us a huge advantage and one that we intend to leverage to the fullest and have been able to do so.

In order to do that, you must have a great team, and we have put together a great leadership team that is driving execution in order to capitalise on the multi-decades of opportunity ahead of us, as we enable the internet above the cloud.

As you heard from Joachim, Tina and Stefan in their presentations, we built a strong foundation in 2021. We demonstrated our ability to scale production, our customer success highlights and our significant order backlog. Now is the time to capitalise on the opportunity ahead of us, and we are making the right investments ahead of growth so we can accelerate our momentum, and we are only getting started.

With that, operator, would you please provide the instructions maybe for the question and answer session, and we can maybe go on to Q&A and take some questions and answer them as a team here.

## Q&A

**Scott Deuschle (Credit Suisse):** Bulent, maybe a few for you to start, and then I have a few for Stefan as well. But I guess just many users of optical links, they have been vertically integrating that capability, Starlink and Spyder are obvious examples of that. I guess, do you think they have done that because that has been the best or optimal solution for them? Or was it just because that was the only option they had at the time? And now as you guys scale production, maybe that trend starts to reverse? Just big picture, how do you think about that trend?

**Bulent Altan:** Sorry, I had a little bit of a delay there. To be frank, we do not see too many operators undertaking an in-house solution. Yes, you have definitely pointed out some of the constellations there and some big ones there, absolutely. But overall, I think we still see in the market, a tendency to rather go out to the market for optical communication payloads.

I think maybe the mega constellations in certain case may want to look into our optical as an in-house development capability. But even in those examples, I think the ones that have undertaken that have shown that it is a very lengthy process. Mynaric with its really long history has been building up IP, building up technology, and bring that to the table, all of that has to be built for an in-house solution and no one has done it in a short amount of time.

For most mega-constellations, optical comms is a merchant supplier prototype. At the end of the day, constellations are businesses which need to turn a profit, and this will be driven by the cost of the hardware to be deployed and the business that can be generating using that.

I think as Mynaric is already quite price-competitive supplier, it is going to come down to the specifications and interoperability. I think you are going to see most people going with a merchant supplier because you need to get to the economies of scale. That is exactly what Mynaric is supplying.

I think when we look into the opportunities that maybe with the in-house solution drivers are, such as SpaceX you mentioned and others, I think Mynaric can be at least a fantastic backup solution as they eliminate single points of failure because we have built a terminal that is highly interoperable. We support pretty much any standard out there.

We have done all our modem design and whatnot in reprogrammable fashion. We have done our hardware configurable. I think that is going to lead everyone to look into where we end up in spec and cost down the line. And I think that is going to result in these companies looking into eliminating single point of failures, looking into Mynaric-like companies also to augment their in-house capability. But as I said, I think we see vertical integration as not a big trend in the mega constellation.

**Scott Deuschle:** Got it. That makes complete sense. I guess just a follow-up on the Northrop contract. I think I read there is some exclusivity there. I am just curious, is that contract exclusive for all defence work that you would want to do with the US government? Does it have to go through Northrop? Or is it just exclusive with respect to the SDA tranche zero or whatever that one is?

**Bulent Altan:** We are cognisant about the business relations that we have with Northrop and a certain amount of non-disclosures they want to have. What I can tell you is Mynaric is perfectly fine selling commercial standard terminals to anyone who wants to have them for

any purpose, including space, air, whether it be commercial or government or defence. The exclusivity is in a much more narrower definition when it comes to really custom products.

**Scott Deuschle:** Got it. And then this one maybe is more for Tina. But just curious if you are selling a CONDOR Mk3 to the government customer versus a commercial customer, is there any difference in pricing that we should be aware of just given the incremental cost of working with the US government? I am just basically trying to think about as I model out units, is there going to be a difference in average revenue per unit depending on the mix of customers in a given year?

**Tina Ghataore:** Thank you for the question. Our pricing is really consistent. We base it on any kind of volumes as well. So it really is volume-dependent. But we have a consistent set of pricing for our customer communities. As you know, depending on certain government contracts, you cannot undercut them, but really is contract-specific and volume specific.

We are looking at the larger volume business and where we can afford to pass on any savings based on our terminal pricing, we can certainly look into that. We operate on a COGS methodology. So as Bulent mentioned, we are very much focused on a price point based on volume pricing that we see based on the different sizes of the constellations across both government and commercial.

**Scott Deuschle:** Understood. And then just for Stefan. The gross margin progression in 2022, how should we think about that relative to 2021? I guess, would you be willing to put a line in the sand and say if gross margins will be positive or negative and any kind of guidance from a margin perspective?

**Stefan Berndt-von Buelow:** So we do not give guidance, but 2022 will still a strong investment year in every sector. So I expect that the gross margin is getting better because we are scaling up the production, but not as high as at the end. So we are not breakeven in 2022. This will come in the further years.

**Austin Moeller (Canaccord Genuity):** My first question here. I remember from your investor deck, you had mentioned that there was an undisclosed US defence contractor that had an agreement with you potentially to procure HAWK air terminals with drones. I was wondering if you had any incremental details you could share about that yet?

**Bulent Altan:** I will jump in and quickly answer that question. That engagement is still going on. We have actually collected quite a bit of experience over the course of the year. We are learning a lot into the application and how we can really penetrate a very large market with that partner. I am not at the liberty to say who that customer is. But I can tell you that they are an integrator that really looks into putting this as a key technology on many platforms out there, both theirs and others. And I think that experience is going to come in twofold.

I think we are going to see our current HAWK really being a big demo product for everything they do. And we are going to look into opportunities to evolve our product as well for future opportunities beyond just the immediate market that the current version can serve. But that is about the status I can give on that.

**Austin Moeller:** And then just on the Northrop contract that you have, the five-year agreement. Does that include the opportunity for them to procure HAWK air terminals as

well? Or is it strictly limited to the CONDOR and any HAWK contract would be awarded separately?

**Bulent Altan:** I will answer that. As I have said earlier, we are a merchant supplier, and we are open to all companies procuring our products, and Northrop and anyone else is, of course, is able to purchase that. The business development agreement does not have any provisions for HAWK per se because it is about rather the joint work towards space, but that does not preclude us working with Northrop Grumman or any other entity for HAWK opportunities.

**Austin Moeller:** And then just one last question. Looking at the presentation you guys put out today, it shows that you have got 211 live terminals year-to-date in the backlog and the pale line there would seem to imply that you are somewhere expecting around like 300 terminals in the backlog by the end of the year. Is that correct to think that?

**Bulent Altan:** I think I will let Tina comment on our outlook. But I can tell you my biggest answer is, of course, very bullish. But Tina can put it much better words.

**Tina Ghataore:** Thanks, Bulent. So we are just in the first quarter of this year, so you can see the backlog is what we have right now. But we are engaged across both product lines, the HAWK and the CONDOR product line as well as market segments, commercial and government. And we are already forecasting to get some key wins across the various programmes that we hope to close this year.

So the number that you are looking at is forward-looking, reflective of some of the opportunities we are actively engaged in at the moment.

**Tom Dinges:** Bulent and team, we have a number of questions that have come in. Bulent, I will throw the first one at you and you can decide who on the team is best to answer. The first question is, what are the main constraints on growth, both in the US and internationally as Mynaric ramps up with operations?

**Bulent Altan:** Actually, I will jump in on this one, and then we will see across the questions to see who is best suited in our team to answer them.

But for this question, I would say that we are in the midst of a rapid expansion of our operation capabilities in the US and in Germany. In Germany, we are outfitting our recently built and output production facility with additional machinery for higher capacity output for terminals, vertically integrating key capabilities like precision CNC for optics. We are putting in a coating facility to decrease our reliance on external capacities and whatever their fluctuations may be.

We are bringing in-house a full electronic board assembly capability, which is already in-house, built about 75% its state-of-the-art automation, process control, quality and data integration and quick turnaround. Once again, eliminating costly and slow processes, where in the past, we had to rely solely on external companies.

We are keeping these external suppliers activated and certified for us, so our in-house capabilities, just really ensure seamless operation. But we do not just have to rely on in-house or out of house, but by having the capabilities available in-house, we really make sure that we have a TAT time and we have execution that is reliable, and we have already seen all the benefits that happens from vertical integration in the current supply chain issues that the world is facing.

In the US production side, we have increased our Los Angeles footprint to twice the size it has been. We have put in clean rooms, assembly stations, environmental testing capabilities, some logistics and supply chain management capabilities. This was done, to a certain extent, in response to our customers' wishes, especially in security-sensitive domains to have the hardware that touches their data to be supplied out of our US facilities and to be in 100% US custody.

So now we are almost done with that task as well, and we are ready to execute on such orders. And as we have also said in our IPO process, this was really where we wanted to invest that capital and really bring up that scalability.

To look into the potential issues so far, we have been able to really execute these steps quite rapidly. Just as an example, we decided on which PCB, so electronics production that we want to build and we identified the line. And within two months, we had the machines in-house. We are able to hire an expert team and placed here are well underway into certifying.

One of the advantages that we are enjoying today is not just the sourcing of machines, but also Mynaric enjoys a certain benefit by being a really strong growth company today during the times of COVID, where people are looking on companies that are hiring and there are certain amounts of definitely downturn in other industries that allow us to look for the best talent and really bring them in.

Once again for that printed circuit board line, we looked worldwide and we found a fantastic expert. We were able to bring him from US to Germany and put him in there and offered him with a team that supports it. So I think we have been able to really use the current time to really pull in the machinery and the talent in place and we have not really had too many stumbles along the way to execute our scalability.

**Tom Dinges:** Okay. We have got one more that has come in as well. Mynaric currently has 100 job openings on your website. How do you plan to: one, recruit and fill those positions? Two, is your current production reduced at all due to having that many open positions?

**Bulent Altan:** Thanks, Tom. Maybe I will let then over to Joachim.

**Joachim Horwath:** Yes. Thank you, Bulent. Mynaric has been an always expanding company. And I must say, growing companies need more helping hands, of course. When we did our switch from a project company to a product company in mid-2018 or so, we were less than 40 people. Now the company employs more than 250 people across three offices, and our recent accolades are putting the spotlight on us for top talent, of course.

Coupled with our ambitious goals and our communication around the vision and our investments into our infrastructure, we are getting a very healthy influx of applications to fulfil these positions, and we are expanding our HR and talent team to source and onboard all these top candidates out of this influx. So I must say, so far, we have done a great job in that, and now we are reaping the benefits, and we will keep on doing so.

As far as the impact to the production rate, yeah, the impact of the current open position is not significant, and in many cases, none. So we have a current production capacity that can fulfil the backlog of the company and the open positions in many cases are for the new capabilities we are bringing in-house. And Bulent mentioned the coating facility for the optics production.

So previously outsourced processes, of course, with new machines, they demand operators for this machinery. And therefore, the acquisition of such machines go in parallel with the hiring of the supporting team, of course.

So we, at Mynaric, that is a bit of philosophy. We believe in leading the market being ready for end demand, while it is forming rather than waiting around for the fixed orders to build the capacity, then we always say we will put the capacity in place and then the customers will come, not like the competition that wait until they have the contract and then they act on that.

So the open positions exactly reflect that, and our recent success came on the back of such a philosophy. And therefore, we think that 100 open positions is a rather healthy number.

**Jürgen Wagner (Stifel):** You mentioned that €20 million cash-in from customer contracts. How much of that will turn into revenues in 2022? And a follow-up question on the previous pricing topic. What pricing curve should we, in general, model as volumes ramp over the next five years?

**Bulent Altan:** Yes, I would like, Stefan, you answer that question, if you do not mind?

**Stefan Berndt-von Buelow:** Yes. I want to talk about the cash-in. Yes. So we expect more than €20 million cash-in by customer this year. But as Tina already explained, the contracts are over a period of one year or two years. So a part of that will be turned into revenue in 2022, but there is still further revenue seen as a company.

And what is important to mention here is we do the revenue recognition under IFRS 15. This means the revenue could only be recognised as revenue when the product is delivered. So we go more for the cash-in by customer because this reflects more our capability to deliver products or increase the work in the company. And yeah, for that, this one.

And the second one was how we see the decrease of the costs with the further production. Joachim also referred on that. We will see a significant decrease, especially on the material cost, with increasing of the production because we in-source the main component of the optics and then we are able to produce cheaper.

I think at the moment, we are producing double-digit. But when we are going now to the triple-digit, then we could already achieve this goal.

**Jürgen Wagner:** So if prices go down by 10%, your cost position will match that, basically, that the gross margin should not be impacted. Is that what you mean, right?

**Bulent Altan:** I think maybe I will give kind of that section of the answer to Tina, who is doing a lot of our proposal, pricing and whatnot and should talk a little bit about the pricing sensitivity and how we price. Tina?

**Tina Ghataore:** Thanks, Bulent, and thank you, Stefan. So on the pricing side of things, both our commercial and government customers are being price sensitive. And on the government side, the Space Development Agency is, in general, setting targets for their satellites, which then translate down to various subsystems of which we are a part.

So commercially, always customers have been sensitive in terms of incorporating a communication payload of which we are part on to this. The way we look at things is we have in-sourced capability. We are in it to deploy large-scale products into these constellations.

We evaluate each opportunity with respect to the probability of when. We have healthy margins because we have in-sourced a significant capability.

As a point of reference, I have spoken about the DARPA Space-BACN programme, which has publicly set a target for a very capable next-generation terminal of about US$100,000 per terminal. So if you are considering modelling for the future, those are the numbers that folks like ourselves and others have to match for volume production on a very capable terminal of the future that is interoperable, has a higher throughput capability.

So our price targets really are based on the throughput, the volume and pretty much what we can do to get that product deployed into the market fast. And the US$100,000, basically price target is then the capability of this interoperability across various technological aspects of the terminal has been achieved. So it is far into the future, not immediate this year, by any means. But that is where we have to all head in the direction.

**Jürgen Wagner:** And a follow-up on your competitors. Who do you see as your closest competitor as we see some entrants lately outside TESAT?

**Tina Ghataore:** So Bulent, I am happy to take that. From a competition standpoint, there have been those that have been well established in the industry working on one-off missions that take multiple years to execute, but may or may not have the scalability that we have been investing in over a period of time.

Some of the new entrants can readily pull off maybe a one terminal mission. But the key to this is what we have learned and Joachim and team and Bulent and team have really learned well over a decade of experience, is being able to scale, design products that take industrial design into consideration. So manufacturing of multiple terminals a day can be achieved.

So we have a handful of competitors in the market. We are always in the top three, so not too concerned there in terms of winning programmes. Some of the new entrants will keep us on our toes. But as we continue to invest our own money into innovation, into not only technology, but our manufacturing capability, increasing our margins, I think we have a pretty large head start against our competition.

**Tom Dinges:** The next question that we have is, do you think constellations will replace fibre over long distances in the medium-term?

**Bulent Altan:** This is a question that I think I would once again give over to Tina. I think she has been seeing exactly our market quite closely. So Tina, go ahead.

**Tina Ghataore:** Thanks, Bulent. Happy to take that. The age old question of satellites and fibre communication. So here is how I look at it. We believe that a parallel capability to terrestrial networks, just like optical communication and real complementary technology to the traditional radio frequency communications. But constellations are the right solutions where the [inaudible] digging of trenches and cables becomes prohibitively expensively.

Here we see a role for constellations [inaudible] and connected and the under-connected, which, as Bulent mentioned earlier, is a population of over four billion today. Beyond that, we believe that constellations will also be the next key in unlocking connectivity for mobility applications, meaning that the roads and the sea and the air.

In all these domains, there is an exponential growing demand for additional bandwidth in every geographical area that has come across. And we believe that especially with events like the arrival of the self-driving cars, this demand will grow even more rapidly. As we become more and more a passenger in our cars and less a driver, we will be driven to consume more bandwidth and constellation in this use case will play a critical role.

Here patching the [inaudible]. And this will continue across various other mobility applications rather airborne or maritime.

**Tom Dinges:** Thank you, Tina. We have one more, Bulent, that has come in. How has Mynaric stress tested its terminal?

**Bulent Altan:** I think this is a great question for Joachim to talk about the Link Testbed and many other capabilities he has built in the company. So Joachim, I think this is one for you to chime. Go ahead. Joachim, are you there?

**Joachim Horwath:** Yes, sure. I shared a little bit in the presentation, and I can just say that here at Mynaric, we take a very regimented and thorough approach to stress testing. We are proud to say that we have built even more higher fidelity emulation capabilities in our company to mimic the environment and the life our terminals will be going through.

So we know of no other company, in fact, or institution that can mimic the environment as close as we can do. Governmental institutions, we work together with, they even want to learn from us how we do it or come to us to test their terminals or the competitor terminals at our facilities. And these capabilities, which we call the Link Testbed, and we have a copy both in Germany and in the US is in addition to the whole slew of testing capabilities that are common to the aerospace industry.

We follow the standard aerospace guidelines, of course, for the qualification of our terminals very closely, and then as they lay off the Link Testbed on top, and we do this testing not only once but continuously ensuring that every potential issue can be identified and everything that our customers may do to our terminal as I have mentioned before, we want to do ourselves to the terminals to really know that the stress test really happened and that we know that it works in the customers application.

For our air terminals, I have shared that. We additionally test them with multiple aircrafts in the air, where our partnership with H3 Mission Systems and their G-520 aircrafts gets us the real stress test for high altitudes that these aircrafts can really fly up to the stratosphere, because they have very high sailing flights.

Beyond tech, we are now also looking to deploy one of our space terminals, a multiple of our space terminals for our own purposes under our own control in the second half of this year into space, which will give us a further testbed in space to test more scenarios, of course. More on this mission we will be coming out shortly.

**Tom Dinges:** Thank you, Joachim. Bulent, we have one more question that we have got in from the web. Can you please update us on development progress you have made on ground station optical terminals? Or what are your plans for revamping development work there? Will the satellite terminals you are producing today be able to communicate with the future ground station product or will they only be suitable for inter-satellite links?

**Bulent Altan:** Stefan, if you do not mind, I will take this myself. Yeah, over the last year, we have seen quite an increased interest in the development of optical ground station terminals. I think this is a sign of the industry's confidence in optical communication technology and its adoption. We are, I think, in a phase of market opportunity sizing. We are doing some amount of effort estimation, what it would take to do a revamp of our existing ground station we have already have done and even delivered in the past.

We believe there is a good size market here justifying a design refresh for enabling a much better engagement by Mynaric into this market segment. I believe we will finish these assessments very soon, and I expect a favourable outcome that we will go into this segment. This could very well result in us, first of all, selling quite a bit of ground stations.

But beyond that, I think this would also enable us to sell more space terminals because of the fact that I think customers are looking for a turnkey solution across different domains from ground to air to space.

To answer the second part of the question, all our space terminals we built until now, and we will keep on building in the future, we will be capable of doing not just optical inter-satellite links, but also ground links. As I have mentioned earlier, both in hardware and in software, we have built configurable, adaptable, flexible, interoperable terminals. And that is a key to be able to deliver these terminals to multiple different customers without having to constantly build a new version of the hardware.

What that also does is that this terminal, once we want to do a ground station, can adapt itself to the uniqueness of ground station link. Of course, you are going to the atmosphere. There are different disturbances. It has to adapt itself. But very quickly, it can re-configurate itself and do a ground station link. So both use cases are possible with the terminal we are delivering today.

I think, really, this engagement will once again show Mynaric's commitment in all the domains, doing optical comps. And you are going to see Mynaric doing space, air and ground. And I want to say that the air terminal really is an excellent terminal that goes beyond just air and does pretty much all mobility. Well, thank you for that question.

**Tom Dinges:** Thank you, everyone, for joining us today for our first Analyst and Investor Day. We thank you for your interest in Mynaric. We will speak with you all again when we release first half 2022 financial results. Goodbye for now.

[END OF TRANSCRIPT]