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CORPORATE PARTICIPANTS

Akash Palkhiwala *QUALCOMM Incorporated - Chief Financial Officer*

Cristiano Renno Amon *QUALCOMM Incorporated - President and Chief Executive Officer*

Mauricio Lopez-Hodoyan *QUALCOMM Incorporated - Vice President of Investor Relations*

Nakul Duggal *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

CONFERENCE CALL PARTICIPANTS

Brett William Simpson *Arete Research Services LLP - Senior Analyst*

Christopher Adam Jackson Rolland *Susquehanna Financial Group, LLLP, Research Division - Senior Analyst*

Gary Wade Mobley *Wells Fargo Securities, LLC, Research Division - Senior Analyst*

Ivan Philip Feinseth *Tigress Financial Partners LLC, Research Division - Director of Research*

Joseph Lawrence Moore *Morgan Stanley, Research Division - Executive Director*

Louis Rocco Miscioscia *Daiwa Securities Co. Ltd., Research Division - Research Analyst*

Roderick B. Hall *Goldman Sachs Group, Inc., Research Division - MD*

Samik Chatterjee *JPMorgan Chase & Co, Research Division - Analyst*

Sherli Looi *Garrison Bradford & Associates Inc. - Senior Vice President, Analyst & Trader*

Vijay Raghavan Rakesh *Mizuho Securities USA LLC, Research Division - MD of Americas Research & Senior Semiconductor Analyst*

Carlos Tavares *Stellantis N.V. - Chief Executive Officer & Executive Director*

David Limp

James Yang

Mary T. Barra *General Motors Company - Chairman & Chief Executive Officer*

Ola Kallenius *Mercedes-Benz Group AG - Chairman of the Management Board & Chief Executive Officer*

Oliver Zipse *Bayerische Motoren Werke Aktiengesellschaft - Chairman of the Board of Management & Chief Executive Officer*

Patrick Brady

Toshihiro Mibe *Honda Motor Co., Ltd. - President, Chief Executive Officer, Representative Executive Officer & Director*

PRESENTATION

Unidentified Participant

Please welcome Vice President, Investor Relations, Mauricio Lopez-Hodoyan.

Mauricio Lopez-Hodoyan - *QUALCOMM Incorporated - Vice President of Investor Relations*

Good afternoon, everyone, and welcome to Qualcomm's 2022 Automotive Day. It's great to be back in New York and see everyone in person. Before we start, I'd like to thank the multiple teams that worked on today's program and our executives for their commitment to investor communications.

We will make forward-looking statements in today's program regarding future business and financial expectations and other future events. I would like to refer you to our SEC filings for a description of our business and associated risks and other important factors, which could cause actual results to differ materially from those in the forward-looking statements.

Also note, we're in our quiet period, and our fiscal year ends this week, therefore, we will not be addressing any questions on financial performance for fiscal Q4.

Lastly, today's agenda includes presentations by Cristiano Amon, Nakul Duggal and Akash Palkhiwala, followed by a short Q&A session. And with that, please join me in welcoming Qualcomm's President and Chief Executive Officer, Cristiano Amon.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Thank you, Mauricio. Appreciate it. Thank you. Good afternoon, everyone. Thank you all for being here. Actually, we're super pleased and honored. We got a full house. Nothing like a car and chips to gather a crowd. And thank you for fighting the rain to get us here. Thank you so much.

This is a very important event for Qualcomm. And it's kind of a reflection of what's happening with our company. And I'll say it's probably graduation day for the Qualcomm automotive business as we position ourselves and establish partnerships to be one of the largest automotive providers of technology for the future of automotive.

Thank you. We have a great story for you today. We're going to have some interesting announcements. But before I get to automotive, and I promise I'll get quick to automotive, I want to take time in this event to talk about 2 things. One, the key element of our strategy, our vision, our role and what is the opportunity for Qualcomm.

The second one, I think one of those things that are not very well understood, which is our IP portfolio and product road map. We're very uniquely positioned. We're very different than many of our peers. And the reality is every day that goes by, our IP and portfolio is becoming more relevant. And I think that's what is going to give us the right to win, and it's going to be the foundation of this great business we're building for the company for the long term. So with that, I will start talking about really the new Qualcomm.

Thank you. That was -- it gave me a punch. It's really about creating a world when everything is connected beyond phones, and it's really about everyone and everything to be 100% connected to the cloud and intelligent. And I think that's our vision.

And our role in this vision is very simple. That's the elevator pitch in the company. We are the company that are going to bring data processing and intelligence to the edge, enabling cloud edge conversions with everything connected. That's our mission. That's the new Qualcomm, and that's what's really creating opportunity for growth as we see a number of new end markets, including automotive, for our technology road map in markets that are growing in many cases at double-digit rates. So exciting time.

And when we look at that, we look at this opportunity in the connected intelligent edge ranging from phones, automotive in the broader IoT category, and they're -- fundamentally, they all have one thing in common. You need to be always connected to the cloud, 100% of the time. You have a new architecture for computing at the edge, which is about heterogeneous and efficiency in computing, we're one of the best companies in the world at building SoCs, and the ability to scale artificial intelligence at the edge.

And that opportunity for Qualcomm truly expands our addressable market to more than $700 billion within the next decade. And as you look, in addition to what we do in mobile, the opportunity is very significant in auto and IoT, and that's the reason we're here to talk about auto opportunity in detail.

So as we look of our strategy, our vision, our role and the opportunity for us, I want to take a little bit of time to explain the Qualcomm IP and product road map. And the reason I say we're uniquely positioned, we're not just a modem company. We're not just an RF company. We're not a CPU company or a GPU company. We have all of those technologies. We have all of them, and we built them with the following in mind: Can we drive the performance leadership? And can we push new boundaries of integration and power efficiency?

And our One Technology Roadmap is unique because of scale. And you will see today in some of the product announcements we're making, how can we scale to incredible levels of performance. And by scaling up and down, not only we can address a number of opportunities, but even within an opportunity such as automotive, we can do this across multiple tiers.

Three pillars to our One Technology Roadmap. Everything wireless. Last-mile connectivity is wireless. It's where they decided. High-performance computing for low-power devices and the ability to scale artificial intelligence. It's also not only about hardware. It's about hardware and software. And especially in an industry like automotive, what we will see today in our product road map is how software is becoming more and more relevant as part of our offering and our solution to the industry.

For each one of those pillars in -- and I won't go in detail, but I just wanted to explain how broad the Qualcomm IP and road map is. It's about having every single wireless technology that matters and have the benchmark outperformance in the first to every new standard. And that's what we do with 5G, with WiFi, Bluetooth, with every single constellation and evolution to precise positioning, which is going to be very important for automotive, and then the future technology that will enable us to create a network, of course, and drive towards intelligent transportation.

But we also do this with computing. I've said many times, Qualcomm is not just a communications company to the mobile industry, it's really a connected computing company. It is the future of advanced computing. We have had leadership in sustained performance per watt in CPU, and now we're pushing the CPU to be also the benchmark of performance. GPU, we always had the leading performance per watt, the highest performance per area, and we now see an opportunity to scale that to applications that you see in desktop, all the way to advanced parallel computing that you see in applications such as automotive, camera and computer vision and a very broad multimedia portfolio. So that's the second pillar of computing.

And the number three is artificial intelligence. In artificial intelligence, which is really happening in the data center today at a very high scale, we had said in the early days of the 5G transition that AI will really get scale at the edge. So I think we have not yet seen how much AI can grow outside the data center, and that's where we focus, to be the leader in AI at the edge. And we bring to that opportunity the highest performance per watt, 2.5 better performance per watt than the incumbents.

Ability to scale massively from 1 tops to 400-plus tops as our One Technology Roadmap scales, be able to use AI in every single element of our SoC, from modem to RF to CPU to GPU to computer vision and camera as well as applications in a revolutionary software application for AI at the edge, which we talk about as AI stack. And what is unique about that is as we execute on the strategy of enabling everything on the edge, the ability to develop AI once and have that run across multiple devices on the ecosystem and expanding from the automotive all the way to the phone and other devices.

So that is how the Qualcomm IP is uniquely positioned, and we truly believe, as we move into the future, when everything is becoming connected and intelligent, that road map is becoming more relevant. And that's where we're focused on, continue to invest on this road map for all the essential technologies for this connected intelligent opportunity.

And I cannot think of a better example of that opportunity as well as the diversification of Qualcomm, which is the automotive industry. The digital transformation of the automotive is happening at unprecedented pace, and it's across a number of areas. So when we look at the trends and the drive towards what is the car on the future, there are a number of things all happening at the same time. Transition to EVs, which require a completely new architecture. The car from the skateboard chassis with the electrical batteries, the motors, that also creates an opportunity for you to redefine and redesign the vehicle with a completely new architecture, including how you think about semiconductors and computing.

Second thing that is happening, the car is now connected to the cloud. And we said that many times. Once you connect the car to the cloud, everything changes. The car becomes a center for services, for distribution of content, for new applications. And that is very connected to not only how the car becomes a platform for new services and a new opportunity for the car companies.

Many of you here will agree with me that -- and I would generalize it, but I think that's mostly true. The relationship between the owner of the car is with the dealership. But now when you think about all this screens in the car, all the computation of power and the connectivity of the cloud, for the first time, the car companies have an opportunity to have a direct relationship with the car owner in real time, personalized experience, provide new services, sell hardware and software services, even run a CRM into some of the applications of the digital cockpit. It's a whole new opportunity that fundamentally transform not only the car, but the entire ecosystem.

And then to that, we had the car becoming intelligent, the ability to drive assisted driving to every car and how do you actually scale that. And I also will talk about the merging of physical and digital spaces. We have been working for virtual reality, mixed reality, augmented reality for a while

now. And when you think about the evolution of the heads-up display, you have incredible opportunities for also merging physical and digital spaces with the car.

When we look at all of those trends, this is the mission that we set ourselves to do at Qualcomm: Can we enable the car of the future? And when you look at this, you'll be able to see a number of different technologies that Qualcomm can provide to the car companies, and they're coming from the One Technology Roadmap in our IP that I just discussed with you. Real-time contextual data, vehicle-to-everything connectivity, understanding all of the surroundings, that's going to drive efficient and intelligent transportation system.

Software-defined vehicle central computing and as you think about the car being the connected computer and the wheels and the new architecture, the ability to drive a new level of efficiency in thermal as you add all this computation and capability of the car. To realize this vision of the car connected to the cloud and then now a hub for content in and out of the car plus services and applications and in the ability to create whole new business models. And eventually, we believe some of those new business models are going to generate as much revenue as in earnings to the auto companies than the profit of selling the car in first place.

It's a big transformation, and that's what we're focused on and focus on building a platform that will enable all of those new services, applications and technology transitions for the car company.

And the embodiment of that vision in that platform is what we call the Snapdragon Digital Chassis. It has a comprehensive digital solution that includes all those elements, which is the digital cockpit, the Car-to-Cloud connectivity and the Snapdragon Ride for autonomy. And it has been embraced broadly by the automotive industry. And that explains the reason Qualcomm has been so successful in a very short period of time.

And the decision about technology partnerships for the future of the auto industry, it has been done. We see within other car companies, there's a transformation. Car companies now wants direct relationship with the technology companies and OEMs, and decisions are made at the CEO level because they're very important for what the future of this industry is.

So I'm going to leave you with a video from General Motors, and then I want to talk about what is the Snapdragon Digital Chassis is bringing in to Qualcomm.

Mary T. Barra - *General Motors Company - Chairman & Chief Executive Officer*

At General Motors, we have a vision of a world with 0 crashes, 0 emissions and 0 congestion. We have the right team, the right technology and importantly, the right partners to deliver and create a better world for all.

General Motors and Qualcomm have a long history of strategic partnership. Our industry and our company are undergoing a once-in-a-lifetime transformation to electric and autonomous vehicles, which is reshaping our approach to technology and innovation. More than ever, it is essential to partner with the right companies, as we are doing with Qualcomm, to foster innovation and deliver the very best vehicles, services and experiences to our customers. I want to thank the Qualcomm team for your partnership, and I look forward to everything we'll continue to achieve together in the future.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

So the reason we selected GM for this video, and we put the Cadillac LYRIQ outside, and hopefully you've had an opportunity to see it because the Cadillac LYRIQ embody each and every one of the elements of the digital chassis as a platform. And that's not unique to GM. I think that's the reason, as I said before, in a very short period of time, the solution has been adopted and embraced by a large number of OEMs.

And with that comes the first announcement today. We are updating our design pipeline today to $30 billion. And I'm going to give you some perspective on it. On our last earnings call, we updated the design pipeline to $19 billion. Within about 2 months, we added $11 billion to the pipeline. And it is now $30 billion, and it really reflects how uniquely positioned the Snapdragon Digital Chassis is and how we're really creating a

platform for the automotive industry. We're very excited to provide that announcement today. It really reflects the success of Qualcomm diversification strategy and execution that connect intelligent edge. And as I said before, I cannot think of anything better to display than the automotive industry.

So we're very excited about that. We have a large number of opportunities. Last comment on the pipeline. You can see that the significant increase in the pipeline in a short period of time is also showing that ADAS is becoming more material in our pipeline.

As I get to the end of my presentation, I want to leave you with one thought. Besides developing leading IP and products, one of the unique things about Qualcomm is our business model. We are a creative ecosystem. And we have been always chose to create an open platform and partner, and you're probably very familiar what Qualcomm has done in mobile, working across the entire ecosystem with carriers, infrastructure vendors, every single OEM, software providers, application providers, test equipment and everybody else.

A great example of the power of this ecosystem was the decision we made, and many of you here in the room I recognize, that follow that to accelerate 5G by 1 year from its original schedule and move an entire ecosystem. That's what we do in automotive. So what you see in this space is we already built an ecosystem of partnerships in automotive. That's very close to the Qualcomm DNA, and that's how we think about those opportunities because we're here in the automotive industry for the long term.

In summary, we're winning the digital future of the automotive semiconductor business. The industry trends that we talk about that today are increasing demand for our One Technology Roadmap. We're gaining share. Rapid adoption of our solutions are driving gains across the global ecosystem. The $30 billion design win pipeline provides confidence in our revenue growth forecast. And because it's automotive industry, it generates predictable, long-term earnings growth and diversification for Qualcomm.

So an exciting time for Qualcomm in automotive. We're super happy to have our very first Automotive Investor Day. And now what I'd like to do is to invite to the stage the real star of the show. I'm just overhead. The General Manager of Automotive business, Nakul Duggal. But before that, you're going to -- I want you to see this video of the CEO of Stellantis, Carlos Tavares. Thank you.

Carlos Tavares - *Stellantis N.V. - Chief Executive Officer & Executive Director*

Good morning to you all. As some of you may know, one of my passions outside of Stellantis is auto racing. I'm drawn to racing because it demands speed and precision to be successful. Speed and precision are also critical in our race to transform Stellantis, one of the world's largest and most diverse automakers, into a sustainable mobility tech company.

Working closely with Cristiano and Nakul, we are confident that Snapdragon Digital Chassis will give us the horsepower we need to win to create the most intelligent, customizable and immersive in-cabin experiences with our STLA Brain and STLA SmartCockpit systems coming in 2024. We will revolutionize the way customers use, interact and communicate with each of our 14 iconic brands. Using Snapdragon automotive platforms, we are laying the foundation of flexibility and speed for our customers to personalize a smart and connected premium driving experience while giving them cutting-edge technology and high performance for years after their purchase.

We win together is a core value at Stellantis. And it's clear that our 2 leadership teams share the same vision of the future, one that delivers on the promise of cutting-edge freedom of mobility for all and helps us achieve our aggressive Dare Forward 2030 targets. At this very moment, we are racing together to bring our tech to the streets and to lead the way the world moves. Thank you.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Good afternoon, everybody. Thank you very much, Carlos, and thank you, Cristiano, for your remarks. Wonderful to be here for our very first Automotive Investor Day.

A little bit about myself. My name is Nakul Duggal. I run the automotive business. I've been with the company since 1995, and I've been in the automotive business since 2012. So I know a little bit about how we got here.

We're going to spend a lot of time about why we are winning. This is a space -- I mean, all of you being here, it's pretty clear automotive is of high interest across the industry. And today, we're going to share a lot of information about what our strategy is, what the Snapdragon Digital Chassis is and really how we have a strategy that is very different from a lot of our competitors.

To be able to start -- maybe to rewind back a little bit. When we got into the automotive space, it was really about taking our One Technology Roadmap and finding technologies, finding products that we could reuse for the auto industry. Over the last 5 years, what we have seen is there is a lot of overlap between core technology that we build and what the automotive transformation requires. We've adapted our technology IP. We've built custom products. And today, we actually have a portfolio that is keeping up with, in fact, even ahead of some of the transformations that are upon us.

What you will start to hear a lot about today is the technology strategy that we've built is mostly organic. This is something that we are very proud of because Qualcomm is a systems company. You know all of us from a mobile heritage. But what we've built is an organic strategy. We've, of course, acquired a few companies for very specialized needs. But we are building platforms that are at scale. We are addressing the needs of global automakers as they try to go through their transformation. And I would like to believe we have the strongest automotive team in the industry.

So we'll spend time today on the key trends that are upon us in automotive, the impact to car architecture as those key trends start to unfold in terms of road maps, the Snapdragon Digital Chassis and what that actually means in terms of this new car architecture and then, of course, why we are winning on the backs of that. We will have time for Q&A in the end.

So let's get started. The change that you're seeing in automotive today is massive. It is massive to the point where the car actually has to be very aware of the environment that it is deployed within. As the car is going digital, everything else around it has to go digital. If you think about the roads, if you think about infrastructure, traffic infrastructure, light, cities, everything is becoming smarter. You have to be able to have the ability to have the grid come all the way down to the vehicle because of electrification.

If you think about business models that have really, over COVID, completely transformed how transportation works, real-time logistics, last-mile delivery, the ability to be able to know what your fleets are doing, it all requires low latency. It requires the car to actually be part of this ecosystem. If you think about applications like safety and driver assistance, these are making cars safer, but if you think about it, they're really making the car a much more complex, much more competition-centric platform that is going to keep evolving, that is going to keep growing and become part of really the technology road map that we are deploying.

You heard Cristiano talk about the physical and the digital coming together. Maps, for us, have become very important because the car has to know what is ahead of it. That requires crowdsourcing. So a tremendous amount of transformation, and Qualcomm is part of the transformation. We're embracing it. We are investing in it. We are deploying our road maps in that direction.

If you think about the driving experience, it is massively changing to the point where the OEM's brand is actually identified by the experience that they provide to their customer inside the vehicle. And that is a massive opportunity for us, and we'll talk about that in quite a bit. But it's really about the digital life of the consumer and how that life, as you move into the vehicle, changes or continues seamlessly as you move from your home or from your office.

The vehicle has to now visualize for the driver what the vehicle is seeing outside of it because safety is very important. This means that the surface area in the vehicle actually has to be aware or familiar with the safety context of the vehicle, and we are driving this change as well.

The massive catalyst that automakers see in front of them as this car architecture changes is electrification. What electrification is doing is it is clearing a need for that change in architecture to get accelerated. And this is really affecting every single automaker globally. It is not limited to just electrification, but combustion engine vehicles are also affected.

But if you think about the next-generation vehicle, you have a bit of batteries. It has an inverter. It has an electric powertrain. It has a battery management and charging system. If you look at the upper body, it gives the vehicle its shape and size, the specific application it will be used for. But really, what is fundamentally changing is the electrical electronic architecture or the digital chassis as we call it.

Now you've seen slides about vehicle architectures, and there were a lot of microcontrollers. I think the key takeaway here is that this architecture isn't really suitable for the car of the future because it isn't designed for software, it's designed for incremental additional functionality over time. And this architecture, we started to see as getting left behind even 5 years ago as we started to introduce system-on-chips, or SoCs, to be able to solve the same problem that microcontrollers are solving.

The idea behind an SoC is to be able to integrate a lot of functionality, in fact, stay ahead of the functionality, to be able to integrate on a technology platform what the SoC provides. And we started to see this 5 years ago as we entered automotive with our Snapdragon cockpit platforms. What we are now starting to see is even a more radical shift where the vehicle is actually getting simplified into physical spaces or zones where you can decentralize. You can aggregate functionality that is specific for that space in the vehicle, the front left, the front right, the actuation, the lighting. You basically decentralize that functionality. So in the center, you are left with driver assistance, automated driving, cockpit systems, connectivity, networking.

What this also does is it sets the vehicle up for the right software-defined platform that you need the vehicle to be able to have. Why is software definition in the vehicle important? A big shift that is going on as we look at this change in architecture is that automakers are actually reclaiming the differentiation in the car. If you think about every single automaker that we work with, they all have teams internally that are doing software development. They are planning for the next-generation architecture.

What that fundamentally means is that the architecture of the vehicle has to be software defined, has to be reused. Automakers have to become software developers, do agile development. For the brand of the car to be visible to the consumer, the automaker has to be in the middle of that change, and software is central to that. The vehicle also will have a tremendous amount of potential in terms of unlocking its services potential. There is so much of value in this car platform. We have started to see, in my mind, the tip of the iceberg in terms of what is possible. But if the platform is completely software defined, this is what will allow automakers to be able to completely take control of it.

So we've been working with automakers across the board as this transition starts to happen.

What we are now seeing is a big shift in terms of the value chain. So we partner very broadly. As a company, we work with Tier 1s. We work with automakers, the entire ecosystem. And the big shift that is upon us is as technology companies, car companies have to be able to have a set of partners that are different, that are unique.

And the efforts that we have put in over the last many years situate us very well in terms of how we come across to automakers. We have the right semiconductor expertise. We've built a tremendous amount of software. We have massive portfolio breadth in terms of the IP that we get involved in. We support flexible business models. We partner very heavily. We have a tremendous amount of engineering support. And most importantly, we are a global company. The problems that automakers are facing are global. They have to be able to go do this at scale. And that is something that we are very familiar with in terms of the background that Qualcomm has had.

So what we have done is really co-define this strategy, and we come across to automakers as technology partners that they bet on.

The Snapdragon Digital Chassis is something that we started off by taking, first of all, the One Technology Roadmap that Cristiano talked about. But then we took each IP block. And we thought about what are the specific requirements that will evolve over time? What are some of the areas that we have to actually change direction on? The camera is a very good example. The camera in a car is very different from the camera in a phone. We now have the same teams that have had expertise in building camera technology, building safety-focused solutions. We acquired Arriver 6 months ago. We are now co-designing the stack and the camera technology, as one example.

This is something that is very unique to Qualcomm because having all of this technology under one roof isn't something that I can imagine any other company has access to, whether it is the wireless technology or C-V2X, whether it is high-performance, low-power compute to be able to scale from entry tier solutions all the way to premium tier solutions or edge intelligence where AI has become center of each of these platforms.

So the Snapdragon Digital Chassis to us, and I think the LYRIQ is a very good example, it has become a bedrock. It actually has become the platform that automakers are relying on as the foundation on top of which they create their next-generation experience, that they rely on so that as they

evolve generations, they have the ability to be able to take the same platform, move over to the next generation, reuse their software, make sure that their teams have the ability to be able to have continuous investments in the same platform.

So the platform has to be scalable because we have to serve all tiers of the market. You are seeing a lot of news around taking data center-type products, putting them into vehicles. The car industry, I think, those of you that have been following this space, is a very cost-sensitive market, and we do understand a little bit about scalability.

Connectivity is very important, and connectivity is about not just connecting the car to the cloud but also connecting the car within itself, connecting the car on the charging station. We support all of those technologies. The cockpit is what gives the car its brand, its identity, the unique space that you have access to that you spend time in where the OEM has the opportunity to be able to differentiate. And that's what we defined in the Snapdragon digital cockpit.

Snapdragon Ride is our platform for automated driving, for driver assistance, for the stacks, for the SoCs. And we'll talk about that in a lot of detail. And Car-to-Cloud is our platform that allows us to be able to not just provide device management for our platforms, but also allow our customers to be able to host their applications on top of our Car-to-Cloud platform, and we'll give you some examples of what we are doing there.

So we have a large number of customers, a massive ecosystem that we are working with that has selected the Snapdragon Digital Chassis as their platform on top of which they're developing. And this has allowed us to be able to expand very significantly the addressable market opportunity that we have.

As this transformation in automotive is accelerating, every car needs to have more tech. It has to be able to have the same platform, but it's next generation. It is something that requires automakers to be able to think ahead. We are working today, for example, for '26 and '27 design, but already planning for what will come in '28.

Performance requirements are through the roof. And this is giving us a very clear indication that the addressable market opportunity is actually going to be very massive through the rest of this decade.

And the $30 billion pipeline that Cristiano just shared, the expansion just in 2 months, is an indicator of how relevant our strategy is for the auto industry.

Let's hear from Mr. Yang, CTO at Great Wall Motors, about our partnership.

James Yang

(foreign language)

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Thank you very much, Mr. Yang, for your partnership. And maybe something that's worth highlighting is we introduced our Snapdragon Ride platform in 2019. Both Cadillac LYRIQ and the Mocca that Great Wall produces are already commercial, are already on the road. So our first ADAS platforms are actually commercial.

Let's talk a little bit about each of the domains. We'll start off with connectivity and Car-to-Cloud as part of the digital chassis. We've been supplying modems to the automotive industry for 20 years now. We started off with General Motors in 2002. And this platform, this product line allowed us to be able to build relationships globally across every single automaker that we work with today. So it's a space that we are very familiar with.

What we have done over the last many years is to actually expand beyond modems. Of course, we built an RF front-end business, but we've added WiFi, Bluetooth to that portfolio. We've added powerline communications. We are now handling satellite communications. We have precise positioning as part of this platform.

And for us, the platform is really now moving in a direction where we deeply understand what customers are doing with this platform, what use cases do they have and how do we become part of defining those use cases, reducing complexity, making development on this platform very seamless. So if you think about the use cases inside the car, there are 2 main scenarios, and you'll be surprised as to how many use cases there are in the car that's stationary and how accessible the car needs to be as it starts to become software defined.

So a variety of different use cases when you are stationary, of course, charging, which is part of our PLC portfolio. But over-the-air updates, predictive maintenance, the ability to access services in the vehicle remotely, this requires a lot of different implementations, architecture for the car, especially as it has to be able to support a variety of different modes. The longer you are away from the vehicle, the more complex it is to actually deal with that vehicle. On the road, it's just a tremendous number of use cases because really the car is connected, and that is what gives it the identity that it needs to have.

We've been #1. We've been a leader in this space for a very long time. And it's because of the road map that we inherit from the core portfolio that Qualcomm builds across modems and RF, across WiFi and Bluetooth, across GPS, which is all -- which are all categories that we are #1 in. Powerline communication is something that we invested in about 10 years ago. And we continue to stay in the market. And it's become a very relevant market because we are one of the top suppliers of PLC chips to most EV automakers.

Cellular V2X is a technology that we invested in about 5 years ago where we determined that it was -- it made sense to have V2X technology, be on a 5G road map, on a 3GPP road map. China is now actually deploying C-V2X, and we are starting to see this transition happen in multiple other markets.

We also started to focus on software services. And by software services, what I mean is the ability to actually make the platform API accessible. So any development that needs to be done on the Snapdragon connectivity platform is something that the automaker can take on by themselves. They don't have to go through a complex value chain. And we are able to connect that to our Car-to-Cloud platform and connect services to it. I'll give you an example of that.

We have 250 million vehicles on the road with our modems today. We have shipped over 400 million WiFi, Bluetooth products into automotive. We are now in our 10th generation of modems for the car. So this is something that we've been doing for a very long time. And you have the support. This is not like the smartphone space. You have to actually support these products for an extensive period of time. So it is definitely a very high bar in terms of what it takes to go make these platforms happen.

And like I've been mentioning, we are transitioning to a connected vehicle platform. What the connected vehicle platform does is it allows us to be able to provide application programming interfaces to our customers such that they can actually write directly on top of the automotive connectivity platform. We expose these APIs. We also provide our Car-to-Cloud Services platform, which is basically a cloud connectivity service that is built in into the edge device, has its host back in the cloud, and we can host customer services, we can also provide our own. This is now becoming a trend that we are starting to see as a variety of different devices get connected. This is something that we are rolling out broadly across a number of different customers.

Before we proceed to the next section, I would like you to hear a little bit from Ola Kallenius, CEO of Mercedes-Benz.

Ola Kallenius - *Mercedes-Benz Group AG - Chairman of the Management Board & Chief Executive Officer*

Hello, everybody. At Mercedes, we take pride in building some of the best luxury cars in the world. And we're proud to partner with the best companies in their respective fields to deliver outstanding products to our customers.

Luxury is, in large part, created in our customers' perception. They have to see, feel and experience it. And I am certain digital luxury done right adds a lot of value to that equation. That is why we're incredibly pleased to extend our more than 10 years of successful collaboration with Qualcomm, to keep working together on one of the most decisive and most fascinating parts of future cars, the digital cockpit. It's great to have Qualcomm on our side, and I can't wait to see the results of our teams in Mercedes cars out on the road.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Thank you, Ola. Starting 2023, Qualcomm will power Mercedes-Benz cockpit. This is something that we've been working on with Mercedes for the last 3 years. It's been a tremendous experience. And working with Mercedes is synonymous with working with the highest-end luxury brands as far as the cockpit goes. So this gives you a sense as to the scalability of the platform.

The next category I want to talk about is the digital cockpit, and this is something we are very proud of, and I'll give you a few reasons why. When we started to focus on automotive about 8 years ago beyond the modem, what became very apparent is that we would have to learn a variety of different things about the auto industry that we obviously did not have the history or the background in. Quality, safety, concurrency, complex automotive software ecosystems. The list is very long.

And I think what we have been able to very successfully do is not just revector the Qualcomm technology portfolio in this direction, but take all of the advantages that we have as Qualcomm in mobile, the scalability, the rate at which our road map evolves, access to the latest process nodes, a really vast portfolio of technologies, bring that differentiation to the automotive industry very rapidly to the point where I would say we've actually accelerated the transformation that you are starting to see because of the cockpit business.

The other piece that it has obviously done for us is it has given us a very deep understanding of car architecture and has positioned us very well for Snapdragon Ride and ADAS, which you will hear about.

The cockpit is, as I've said many times, becoming the space where the OEM extends their brand, their identity, their relationship with the automaker. It is a space that has the intersection of many, many industry trends, augmented reality, high-resolution displays, premium audio, voice assistance, streaming solutions.

The digital instrument cluster is completely a safety space. You have to be able to visualize what is happening outside the vehicle inside. You have to be able to support phones that are brought in. Every region that you get into has a slightly different unique geographic need. So really a very broad set of applications, very broad set of expectations from automotive customers in terms of what is required to be able to support this space.

The rear seat of the vehicle is also getting very differentiated. We recently launched with the BMW iX7. And if you are familiar with the vehicle, there is a rear seat entertainment productivity environment, which is really about you being able to have Teams calls. You have multiple audio zones in the back seat. You can stream all types of content. So this complexity that you have to be able to go support in a vehicle touches many different dimensions of hardware and software.

The way that we have addressed this specific opportunity is we started to first look at what were the specific IP blocks that we had to go support, and it became very clear that this was a category where high performance, low power, DNA that Qualcomm is very familiar with, is something that was absolutely key. We had to be able to support high-end graphics, multimedia, premium audio, a lot of on-demand edge AI capabilities.

The software requirements for automotive, the software architecture for the digital cockpit is very unique. We have to be able to support multiple tiers of performance. We have to be able to support global requirements. The time-to-market needs are getting more and more aggressive. And the work that we have done across all these various IP blocks has allowed us to become the go-to-market platform for the industry. The auto industry today develops on the Snapdragon Digital Cockpit.

Why are we winning? If you look to the left-hand side of this slide, this will give you -- in a very short period of time, about 7 years, we started off in 2016, in 7 years we have actually integrated more and more functionality into the SoC that has allowed us to do 2 things. Number one, the IP blocks that we are designing for Snapdragon have become extremely advanced because we are actually taking requirements from the auto industry,

changing our road map and making that a highly differentiated technology block. Number two, we take these blocks and we actually make them available at broader and broader tiers of the SoC.

So the goal is to be able to provide these features at more and more affordable tiers of the segment. This allows automakers to be able to design on our platform 1 generation and add them onto the next generation. The expectation is what was available in the luxury tier will move to the higher tier and so on and so forth.

In a very short period of time, we are actually commercializing our fourth generation this year. We commercialized our first generation in 2016. So the amount of time that has gone by, I think I recall it was 28-nanometer in 2016, 5-nanometer this year. So the pace at which the technology has accelerated and that OEMs have actually embraced that technology has significantly hastened.

The right-hand side is, of course, the IP block, the SoC that allows us to be able to provide this level of scalability across the board. It doesn't stop at just the IP. The software is very complex for the cockpit as well, because you have to be able to support safety applications and general purpose consumer applications concurrently. You have to be able to deal with the real-time needs of the car, the always-on, the -- when you take your seatbelt off, the alert has to go off, that is coming from the cockpit system. The cluster is a safety space. You have to be able to run an Android app at the same time. Make sure that when the app crashes, the rest of the system is up.

This is work that we have done over the last 7 or 8 years. And this software is very much part of the platform software that we built. So unlike in the mobile space, where it's mostly a silicon conversation, in automotive, it's silicon plus a tremendous amount of platform software. And what this has really allowed us to do is to become a host, to become a container for software that the entire ecosystem develops that we are actually hosting onto our platform.

So we have this example, and I can give you an example from China in terms of what we go do in that market. What this allows us to do is to be able to take our road map, build this platform software and then very rapidly customize for the consumer trends that are changing, for automotive trends that are changing, but then also change for geography.

So if China has a very different requirement in the U.S. or Europe, we are able to go deal with this. This is highly differentiated, but this is something that we have learned over the last 7 years. If you're not in this space, this isn't something that you can actually do without that experience.

Let me now have 2 of our very key partners, Amazon and Google, share with you the experience that we've had with them.

Patrick Brady

Hello, everyone, and thank you for having me at Qualcomm's Inaugural Automotive Investor Day. At Google, we believe that the automotive industry is a one-of-a-kind opportunity for us all. Just in the last 5 years, we've seen such a significant transformation in automotive. And when I look at the road ahead, the opportunity to completely redefine the driving experience remains a very exciting area of focus for us.

From the very beginning, Google and Qualcomm have been partnering together to bring best-in-class digital experiences into the car. We've been working with Cristiano and Nakul and the entire Qualcomm automotive team on the Snapdragon Digital Cockpit platform over several generations now. And we've brought this platform to market, running Android Automotive OS with Google services built in to players across the industry together, including Volvo, Renault and GM, just to name a few. We have many more exciting partners to announce on the journey ahead.

Automotive is really an exciting platform for us because it allows us to bring so many aspects of our digital lives together into 1 place. And we believe that partnerships such as the one we have with Qualcomm are really the key to unlocking this full potential. We look forward to many more continued successes on the road ahead together with the Qualcomm Automotive team.

David Limp

I'm excited to join you here today. At Amazon, Ambient Intelligence is core to our vision. Our mission is to build personalized, proactive and intuitive technology that adapts to you. Ambient technology shines best in environments where people are focused on other tasks, helping them be more present in the world all around them. And nowhere is that more important than in the car.

An ambient experience can help minimize distractions and keep you connected and entertained while you focus on the road ahead of you. I experience this every day in my Rivian and in my Mini. I can just ask Alexa for directions or play my favorite podcast while I'm driving home from work.

Inventing these kinds of experiences in the car require best-in-class silicon and software solutions. Partners like Qualcomm Technology share our vision and are helping make this a reality. The Snapdragon Digital Chassis is helping us build and integrate not only the Alexa in-vehicle experiences that are on the road today, but also the next-generation digital cabin experiences of the future.

Take the Stellantis Smart Cockpit software we're building. This will be in millions of vehicles that has the potential to enable completely new possibilities. For example, you can imagine Chrysler vehicles with a family road trip planner that offers fun and helpful stops along your journey, or in a Jeep, an off-road coach that will help you tackle all different types of terrain.

This is just the beginning for Ambient Intelligence, both in the car and also with what we're building on top of Qualcomm Silicon. As we say at Amazon, it really is day 1. We look forward to continuing to work with Qualcomm on building the digital cabin of the future. We know it will delight our shared customers. Thanks so much.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Thank you, Patrick and David. It's fantastic to have partners like Google and Amazon working with us.

We have built really a massive book of business on the backs of these very important OEM partnerships that we have established over, I would say, a relatively short period of time. Today, we work with virtually every single automaker globally on our digital cockpit platforms.

Let's move over to Snapdragon Ride, which I know a lot of you are very interested in learning about a whole lot more. It's very important to keep in mind what we just discussed about the cockpit because what that actually means is that we have a trusted partnership with all automakers globally in terms of how we actually work with them. Our silicon, our way of working, our software capabilities, our global footprint, this is very important as automakers think about what kind of partnerships to be building as they start to take on more complexity by themselves.

Automated driving is a very unique challenge and I'm sure a lot of you are very aware there is still a lot of investment going on into this space because the technology is still evolving. Sensors are evolving. The SoC requirements are highly complex. The software requirements are very unique. Tremendous amount of AI is required. You have to be able to build systems that are not just ready for performance, but ready for the power consumption needs of the car.

As electric vehicle platforms are becoming very widespread, there is a very clear trade-off between the amount of battery capacity you can afford versus how much energy your automated driving system will consume. The vehicle has to learn continuously, and the vehicle has to actually be updated continuously. This is absolutely a new problem.

There are not many problems like this in our time. And if you think about it, this is something where the automaker has to take a lot of responsibility in terms of the platform that they're building, because as they evolve the platform, they're adding more functionality that has to be validated.

To orient and calibrate us all in terms of what the various levels of autonomy are, and I'm sure all of you are very familiar with this, Level 1 is basically now becoming a safety mandated technology, automatic emergency braking, lane keep assist, things of that nature, that are really mandated as part of new car assessment programs.

If you think about Level 2, you now have further intelligence beyond cruise control, so you are actually able to maintain a certain distance, keep the car on the road, take on this additional level of complexity, but still assisted driving.

As you start to move to L2+ and then L3 and beyond, now you start to get into areas where the vehicle is designed to be able to add more comfort, where the vehicle will allow the customer to not engage and take on more complex maneuvers; change a lane if there is space available, maybe ask for permission or maybe automatically do it if the vehicle has the right sensors; be able to detect a red light and actually come to a halt in an urban environment; be able to have much more complex environments as you start to move towards L4, where you want to be able to have redundant systems, you want to be able to have a backup system that will take over. And eventually, you start to get to robotaxis and driverless cars where you're just adding more and more complexity, a broader operational design domain for the vehicle. Snapdragon Ride supports a portfolio that addresses all of these tiers.

Setting the stage for how we develop, how we think about the approach towards autonomous driving, automated driving is really no different than what I shared with you in connectivity or in ADAS. We have 4 different key areas where we spend a lot of effort in terms of making sure we have the core technology. The hardware IP that is needed for areas where, from a sensor perspective, we are extremely focused. Cameras, the ISP is very important, the AI blocks that we have to be able to go support. Location and positioning is an area that we spend a lot of time on. Cellular V2X is an area we've spent tremendous amount of time on in terms of bringing that technology to market. And Maps is a new area that we are looking at. We partner widely for LiDAR, for RADAR and sensors such as that, but we, of course, integrate those sensors into our larger platforms.

As far as the core technology goes, we do a lot of applied AI because we are building stack solutions. So we are actually not just building the underlying IP, but we are actually applying AI for the final solution that is deployed in vehicles, and we'll share a little bit more about that. We invest heavily in computer vision software, because this we believe is going to be a core part of every autonomous vehicle going forward. So this is a core area that we have expanded into. And there is a tremendous amount of infrastructure needed for data collection, for training, for synthetic learning.

The semiconductor and SoC design for automated driving is also unique. You have to be able to design a safety solution. We have invested in safety technology, brought in a lot of expertise from the outside. So platform that we are now building are designed to be power optimized and all the safe.

And then from an overall system design perspective, we have to be able to support continuous learning, the ability to be able to get feedback from the vehicle, learn from it, provide any update. The ability to run run-in systems in shadow mode, so you actually have a learning algorithm that is tracking what the vehicle behavior is.

The way that we got here was we started off by investing in, first, building our own L2+ stack about 5 years ago. And the purpose behind doing this was we wanted to make sure that we had a very clear understanding at Qualcomm as to what are the workloads that are required to be able to run automated driving. We were obviously using Snapdragon platforms, but this was mostly a software effort.

In 2019, we decided to enter into the ADAS SoC space. We announced Snapdragon Ride at CES 2019, and we won the GM business later that year. This was not just an SoC, but also an accelerator. So when we made that announcement, we were aware that we were going to get into requirements that were going to have significant amount of AI capability, AI performance headroom needs, and that's what we planned for back then.

We started to look at computer vision, and it made sense for us to actually acquire this talent for 2 very specific reasons. One, we had to be able to have safety expertise in the computer vision space. And number two, we had to make sure that we could get a stack that had been tested by the ecosystem, that had a lot of different miles under it, that had a lot of different support from a variety of different automakers.

So we set up a partnership with Veoneer. Veoneer spun out Arriver, and we acquired Arriver in late '21, early '22. And we have been working with multiple automakers in -- I think it was Investor Day last year where we announced our partnership with BMW, which was really a partnership that was built on BMW selecting the ADAS SoCs that we were building, the computer vision stack that we were going to build together with Arriver, and, of course, a joint collaboration with BMW, which I will talk about in a little bit.

So this is, of course, a very different space. I'm sure you're all aware of it. Let me orient you in terms of the approach that we have taken. If you look at the right-hand side, what it shows you is a fully equipped vehicle with a tremendous amount of sensor capability across many modalities, multiple types of RADAR, multiple types of LiDAR, multiple cameras, ultrasonic, GPS capability, mapping capability. And there are multiple instances of these sensors. As you start to go to the high end, you have to be able to deal with the tremendous amount of complexity.

The way that we have built our road map is, we provide SoCs that are highly scalable from entry tier all the way to L4 and L5 SoCs and accelerators, which come with platform software. We have built a computer vision stack where we are codesigning the Arriver computer vision with our SoC, so that we have a dedicated computer vision solution that goes from L1 to L3. And then we build a comprehensive automated driving stack from silicon base platform software driving stack all the way up.

What this allows us to do is to really engage with all types of customers. Different customers have very different approaches in terms of how they engage with these markets and we have really come up with a way that is highly modular.

Let's talk about these one by one. So if you think about the SoCs and the accelerators, we have commercialized Gen 1. It is in the LYRIQ, it is in the Great Wall Motor platform, and a few others. What we built for our SoCs, first of all, is that they are safety designed from the ground up. We are building ACD platforms. We are building neural network IP blocks that are highly scalable, because we have to be able to support every single possible performance requirement, including for dedicated AI accelerators.

We use GPUs for not just visualization but also parallel processing and these are safety fields. The camera, as I shared earlier, is highly optimized for automotive requirements. It has a safety pipeline built in. The architecture is designed for low latency, but highly optimized power consumption at high-performance loads.

We provide a tremendous amount of platform software, safe operating systems, safe hypervisor. The middleware that we are building to be able to make all of these sensors work together is all provided by Qualcomm. And then we provide an AI stack that provides tools, compilers, simulators for customers to be able to write on top of our platforms. In addition to the SoCs, we provide accelerators to be able to go beyond to L3 and L4.

Moving on to the Snapdragon Ride Vision stack. So what we've done here is we've -- when we partnered with Veoneer, one thing that was clear was that we needed to codesign the stack and the silicon from a power perspective, from an AI perspective, from being able to maximize the availability of the hardware that we needed from the software requirements that are coming in.

And the big advantage that we see here is, because this space is so continuously changing, we have the ability to work directly with customers, get new requirements from them, optimize the stack, but optimize it in a way that is best conducive for the hardware IP that we are building. So we are able to optimize the utilization of the IP, the power requirements. So it is essentially an end-to-end system. Think of it like a modem where we have a lot of hardware and software coming together, but it is codesigned.

The stack is now in its fifth generation, and it has actually been deployed by Volvo, by Mercedes, by Geely, by BYD. So there are a lot of miles on this stack. There's a lot of experience in the team that we've been added, and we are working with many other OEMs, including BMW, for the next generation.

The platform that Ride Vision runs on is an open platform. So while we provide a vision stack, if you want to be able to bring your parking stack or run your own drive policy or bring driver monitoring, that is something that the platform allows. So it allows us to be able to have an open platform while providing computer vision. It improves the overall BOM of the system. It is highly cost optimized for customers that are looking to select this platform.

We are also adding mapping capability into the computer vision stack. So as we start to put these vehicles on the road, they will be designed for us to be able to create autonomous driving maps.

Moving on to automated driving and the overall stack. Complex slide, so let me maybe start off from the left-hand side. One thing to keep in mind, as you start to think about levels of automated driving, is that you have to think about the customer functions, the function that is visible to you

as a consumer and how that function is designed. And as might be obvious, when you design these functions, you have to be able to plan for how that same platform will add more functionality.

We are designing today for the L3 solution. But the platform is actually designed to be upgradable to L4, so we are supporting redundant modes. We are supporting the additional sensors to be added. This modularity allows us to be able to take the same platform and actually multiply it across a variety of different customers.

The stack development is done by Qualcomm, by the Arriver teams that we have recently acquired, and by BMW. BMW has been a very important partner as we have gone down the Snapdragon Ride part for a few reasons. First of all, BMW is a leading tech player as far as automotive safety goes. They have a tremendous amount of experience in this space. And what we have done in this specific area is to actually set up a collaboration with them so that we are jointly developing this as we stack with them.

The way that the business model works is that we jointly own the IP. And once this development is complete, as we launch in 2025, Qualcomm owns the IP, we have the ability to scale this up to any other OEM.

Let's hear from Oliver Zipse, CEO of BMW, about our partnership.

Oliver Zipse - *Bayerische Motoren Werke Aktiengesellschaft - Chairman of the Board of Management & Chief Executive Officer*

For over a decade, the BMW Group has partnered with Qualcomm to bring cutting-edge technology to our vehicles. Snapdragon platforms create world-class digital experiences, and our customers enjoy this every day around the world. With the new strategic partnership on automated driving between Qualcomm and the BMW Group, we are taking our collaboration to a completely new level.

Our goal, the joint development of first-class next-generation driver assistance technologies. This ranges from safety features to advanced solutions for Level 3 automated driving. And now in the Neue Klasse, our completely new vehicle generation, which we will launch in 2025, these new jointly developed systems will be used for the very first time.

In our partnership, we rely on co-development, equal cooperation at high level. In this way, we create maximum synergies in the development of a product that both players need for their respective business models. Together we are developing trend-setting technologies for the future of digital and fully connected mobility.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Thank you, Oliver. And it really is tremendous to work with the BMW teams. It really has been foundational for a lot of the work that we are now doing with BMW in the ADAS space.

So the way that we have approached this market is that we understand that every automaker has some very unique requirements, some very unique development plans in some areas. Customers are doing their own stack development. In other areas, they would like to acquire a full stack, and in some other areas, a combination, a mix of the two.

We support all of those business models. And if you think about the pipeline and the rate at which it is growing, we have to because the rate at which automotive is transforming, there is definitely a race for automakers to be able to own the differentiation in the vehicles. Everybody has a different approach, and we have to be able to support a variety of business models.

So let's go back to where we started. The car is moving towards central compute, and it is becoming a software-defined vehicle architecture. Today, we are very excited to announce that the future of central compute is here, and we are introducing the industry's first supercompute class SoC portfolio.

This platform allows us to be able to provide mixed criticality support for the central compute architecture. It allows us to be able to support the digital cockpit, infotainment, visualization of the safety context, automated driving, including sensor processing, the driving functions that we talked about, the low-level fusion, the system-level AI, the redundant mode support. It supports the networking requirements of the vehicle from cybersecurity to high-speed connectivity in the vehicle, and it supports safety and consumer workloads on the same exact platform.

So this will be the first supercompute SoC portfolio for automotive. This will be a family of chips. So this allows us to be able to take the same exact architecture, start off at the very high tier, scale it all the way down to the entry tier. The software architecture is designed to be SOA or services-oriented architecture compliant. The fabric that we are designing has been co-designed with customers. So we are actually taking requirements from key OEM customers, understanding how they would like safety requirements to start to mesh, start to fuse together, and that is how we have designed this fabric. This is high-performance compute at the edge on a low-power envelope. We have already been designed in at multiple global OEMs with this platform, and we will share a whole lot more about this at CES.

So Qualcomm offers the most scalable central compute, software-defined, vehicle-ready portfolio in the industry. As you heard, we support every technology block. We have platform software that enables these platforms, so that we can help with the overall cost of the platform, the time to market requirements, the reusability across generations. We support a massive number of ecosystem partners because automotive is, in that sense, quite a different industry where you have to work across many different parties to be able to build a platform. And very importantly, we designed the portfolio to have clear appropriate performance, which is extremely important because not everybody needs the top right. You need to actually be able to have a scalable solution.

With this very unique road map, we are now positioned to really address every tier of the market from top to bottom. We are also very flexible in terms of when customers are ready to embrace this next change. So we have the ability to have the same fabric, operate either as an automated driving fabric or a digital cockpit fabric or a combination of the 2.

To bring this all together, the reason why Snapdragon Ride is becoming a very important platform for automakers to design on, we provide a full suite of hardware, software and stack solutions. These are open platforms, so they welcome the innovation of the ecosystem, the work that automakers and Tier 1s have done by themselves. We have very flexible engagement models with customers, as I explained. The architecture is cloud native. So it allows us to be able to actually have the ability to develop these platforms such that they are always updatable. We support a very broad ecosystem of partners, and these are multi-tier power and performance optimized platforms.

While we have our hands quite full with the Snapdragon Digital Chassis, we continue to look at what else is possible. We are looking at zonal controllers and domain controllers, because this is, as I explained earlier, a trend that is upon us and is going to be here to stay. We are expanding the chassis to the 2-wheeler market. There is a tremendous amount of opportunity in that space, because those platforms also require connectivity, intelligence, safety. So we are designing the chassis to be miniaturized for a different form factor. And we are going to take Snapdragon Ride to geo-fenced, last-mile autonomy solutions as well.

In conclusion, Qualcomm Automotive is equipped with the assets to win the digital future of the car. We really are unique in that we have access to every single technology block and we are building a portfolio that brings that to life. We connect the car within, to its environment, and to the cloud. We create very unique in-cabin experiences. We are developing comprehensive automated and assisted driving platforms. We are building a cloud-connected services-oriented architecture.

Thank you very much for showing up today. Really great to see all of you. And I'd like to welcome my friend and our CFO, Akash Palkhiwala. But first, a message from Mibe-san from Honda.

Toshihiro Mibe - *Honda Motor Co., Ltd. - President, Chief Executive Officer, Representative Executive Officer & Director*

Hello, everyone. I'm Toshihiro Mibe of Honda Motor. We, Honda, have raised our midterm vision of cyber people worldwide with the joy of expanding their lives' potential and have utilized Qualcomm's high functioning and reliable Snapdragon Cockpit platform, which helps us to realize this vision.

In addition, we are introducing our new model with a third-generation Snapdragon Cockpit platform into the U.S. market from the second half of 2022. We are expecting this technology to further improvements in graphics performance and usability and to deliver products that will meet the expectation of our customers.

In 2023, we will provide this model to the customers around the world. We would like to enhance the big information to in the connected area through a stronger and better partnership with Qualcomm, and to work together in order to provide high value-added products and expanding our services, which will satisfy our customers. I wish Qualcomm continued success in the future.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Wow. Nakul, great job, great job. Thank you, everyone, for coming. Good afternoon. I'm very excited to see all these familiar faces here, and hopefully, you found the story extremely exciting. I want to thank people who are calling in online, a lot of investors. Unfortunately, they couldn't come in person, and so thank you for attending. Qualcomm employees who are online as well. Thank you for all your hard work. You are the reason why we can stand up here and do this stuff. So thank you very much. And then people who braved the traffic and the rain to come here, awesome. Thank you for coming.

When we decided to put Qualcomm chips and cars together, we didn't expect the president to show up. So hence, the traffic. So Cristiano and Nakul gave just incredible presentations. I hope this was extremely educational for you why we feel like we have the technology, we have the products, now we have the customer relationships, and why we are so excited about where this business is going.

As we stood here about in November last year, one of the things we talked about was our priority was diversification and growth. And the auto business is a great example for us, which delivers on both of those promises. And so we're excited to be here to talk about this business with you. You've heard about technology. You've heard about products. Now I'm going to tie together all in the financial framework over the next few slides very quickly.

All right. So why don't we start with a scorecard of what we have accomplished in 10 short months since the last Investor Day? This was in November last year when we were here in front of you, and we laid out some targets, and I wanted to just quickly address how we've done against those.

First is our financial performance in fiscal '22. We're on track to deliver $1.3 billion of revenue, 30% revenue growth year-over-year. Second is digital cockpit. This year, our focus was to ramp and launch new cars with our digital cockpit solution. We did 20 of those launches in the year. A lot of our revenue until now, as Nakul mentioned, was driven by connectivity. Going forward, we are very excited about digital cockpit driving our revenue growth.

Third, we achieved 3 key milestones in ADAS. First one, we expanded our chipset road map from Level 1 to Level 5, from lowest tier car to higher tier car, to be a one-stop shop for chipset solutions for OEMs. Second, we acquired Arriver, a very key step in expanding our experience in safety and automotive requirements and getting their software to combine with our software for ADAS. Third, we did the partnership with BMW, which allows us to then commercialize the joint solution between us and Arriver in cars at scale and then take that solution to other OEMs. Very important 3 steps. And what we have as a result of this is an open, scalable, over-the-air upgradable platform for ADAS software.

Finally, as Cristiano mentioned, we have more than doubled our design win pipeline as well in the last 10 months. So we're excited about the progress. We're very proud of what we've accomplished. And I'm going to talk about how we move forward from here.

So let's start with the addressable market for us. If you think about how the industry is transforming and how our product portfolio has expanded, when you put those 2 together, we have a much larger addressable market than we had in the past.

The 3 key drivers here. First is connectivity. All cars are going to get connected, and this is not just about 4G, 5G, traditionally what you think about Qualcomm. It has WiFi, Bluetooth, power line communication, Cellular V2X, position location, all these technologies integrated in 1 solution. There's no one else who has that portfolio.

Second is digital cockpit software and services. The inside of the car, as Nakul said, is being transformed. You have the instrument cluster, the infotainment center, smart mirrors, rear seat entertainment, all of those things expand our SAM significantly. And then finally, ADAS, you're seeing more and more capabilities in cars on ADAS, and this will continue for the next 10, 15 years. And this gives us a long-term growth opportunity from a TAM perspective. When you put this all together, we have approximately $100 billion TAM by 2030 that we can go after. And I'll put a revenue target against it in a bit.

When you think about on a per car basis, a lower tier car, we have an opportunity of approximately $200, stretching all the way to $3,000 at the high tier. And you should think of cars going forward, the mix will continue to shift towards the high end. So the opportunity will keep expanding as we go forward.

Finally, while ADAS is rapidly expanding, you can see the scale we have in front of us for connectivity and digital cockpit. So this is not just an ADAS story. It's starting with connectivity, going to digital cockpit, going to ADAS. It's a combination of all those opportunities for us.

Now let's talk about our primary KPI, design wins. And I know I get this question all the time, so I'm going to start with defining design wins. The way we calculate this number is after we get an award with locked pricing for any socket from an OEM, we use that plus the expected volume that we receive from the OEM, calibrate it for the size of the market, and we look at the lifetime revenue for that given socket. And that is what informs our estimate for design win pipeline.

Typically, for a design win, once we get a design win, revenue would start in 3, 4 years, and it would go for 7, 8 years. So that's the framework of how we come up with this number. With our strong portfolio, the pipeline has expanded rapidly, as Cristiano said, $30 billion. And let me compare this number to 3 points in time in the past.

Less than 3 years ago, we did our Analyst Day. We had, at that point, $6.5 billion design win pipeline. Last year, 10 months ago, we were close to $13 billion design win pipeline. And then 2 months ago, when we did our earnings release, we were approximately $19 billion. So we've gone from that to $30 billion in a short 2 months. Now of course, the timing just worked out for us. Automakers made decisions right in that window. So that's obviously very fortunate for us. But we are very excited about the product offering, and it shows up in the numbers.

If you look at the bubbles on the right, it shows the graduation of us into ADAS. The design win pipeline now has a very large ADAS component to it as well. And we are not done. As we look forward, over the next 2 years, we expect several OEMs to make decisions on platform choices, and we think we have a great platform, and this is a story that will continue going forward.

So now I'm going to talk about revenue and operating scale targets for us. First is revenue. With this increase in design win pipeline, we're now forecasting greater than $4 billion in revenue in fiscal '26 and greater than $9 billion in revenue in fiscal '31. The attractive part about this market for us, of course, is the strong, sustained growth opportunity. And what this does is makes us one of the largest chip companies in the auto industry. It positions us to be the leader here.

Let me talk about a couple of revenue milestones, and I discussed this earlier on digital cockpit. Fiscal '22 is the year for ramp for our digital cockpit business. Fiscal '26 is when we really start scaling ADAS. We'll have a little bit of revenue earlier than that, but that's when the revenue will really start scaling. That is why we have confidence in a very long revenue ramp here.

The other thing I'll say is in terms of visibility, we have exceptional visibility for our revenue forecast. Over the next 4 years, 90% of our revenue forecast, cumulative revenue forecast over the next 4 years, is covered under existing design wins. If you recall, this number was 70% 10 months ago when we were at Investor Day. Now it's ramped up to 90%.

The next thing I want to talk about is operating scale. Today, we are already operating at scale in connectivity and digital cockpit. ADAS, as you would expect, is in investment mode. We are investing in the chip, we're investing in the software road map and with the Arriver acquisition. As we look forward, fiscal '26 and beyond, we expect the auto business to be accretive to overall QCT margins.

So long-term opportunities that are not in our financials. So Nakul covered it, I'm not going to go through details on this slide. But the key thing to keep in mind, 2 key messages. The financial forecast that we just went through does not include these markets. These would be upside. The second most important message is, we already have the technologies needed to go after these markets. So it is about executing on what we have on our plate and then extending to these areas, and we are positioned to do that.

Now I'll talk about QTL and our licensing business in auto. We've had a licensing business for a long period of time. It's been mostly, of course, focused on 3G, 4G till now. And as I think Nakul mentioned as well, we have over 250 million vehicles on the road that are all licensed from a QTL perspective. Now with 5G, all sorts of new interesting opportunities open up. So we're looking forward to 5G getting deployed in cars. And as that happens, we'll bring our patent portfolio to bear and it helps our licensing business.

About 2 years ago, we announced a program for 5G licensing for cars at approximately at $5 per connected vehicle. That's the program we're executing on. We have over 50 licenses now. And as we go forward, starting fiscal '24, when 5G ramps in vehicles, it will help our QTL business.

There's 2 things to keep in mind as we go from 4G to 5G in cars. First is new use cases, more connected cars; and second is QTL has a higher royalty rate, which will help the business. Those are the 2 things we look forward to from a QTL perspective.

So to wrap up, I want to go back to Cristiano's summary slide. Things are going in our favor. The industry trends from an electrification, ADAS, software-defined vehicle perspective, it puts us at an advantage. When you think of us in automotive, we're a chip and software company. This is not a hardware play. There's tremendous amount of software leverage with us, and we are an AI company.

Second is we're seeing rapid adoption of our platforms and our solutions. And you're seeing that in the design win pipeline. Third is because of the way the auto industry works, the design win pipeline gives us confidence in the long-term revenue forecast that we are laying out. And then finally, this is a business that gives us the 2 core things that we told you about 10 months ago: Revenue growth and diversification, and we are focused on that.

So I hope we were able to give you insight into the business, the technology, the products, why we're winning, why we are excited about our relationship with our customers here. And thank you very much for coming. I'd now like to invite Cristiano and Nakul back on stage for Q&A. Thank you.

QUESTIONS AND ANSWERS

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Well, first of all, thank you, everyone, for sticking with us for the whole presentation. I know we give a lot of information, hopefully, what's useful, and you are as excited as we are about the future for the automotive industry. I think there's a question back there.

Roderick B. Hall - *Goldman Sachs Group, Inc., Research Division - MD*

It's Rod Hall with Goldman Sachs. I thought I'd -- just wondered if you could talk a little bit about recurring revenue streams within the revenue target, what the opportunities are? I know the $5 per car on QTL, but could you dig into how much is recurring, maybe what that looks like within the revenue target and the TAM as you look forward?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So our revenue target and the kind of design win pipeline that we laid out includes the software and chipset products that we have and the traction we have across the OEMs for all components of the digital cockpit. A lot of the software revenue, services revenue and cloud revenue, we

think of it as upside to those numbers. Tremendous opportunities there, as Nakul outlined, but those are not really factored into the $30 billion. That would be upside on top of that.

Gary Wade Mobley - *Wells Fargo Securities, LLC, Research Division - Senior Analyst*

Gary Mobley, Wells Fargo Securities. Thanks for hosting this event. I think I probably speak for everybody, but I always enjoy coming to Qualcomm events. So with respect to your TAM estimate of $100 billion, with all due respect, I want to press you on that a little bit because if I look at Gartner's forecast for automotive semiconductors in that same year 2030, they're at around $110 billion, $120 billion, and that's obviously everything. And so I'm hoping that you can reconcile and help us understand how the 3 different areas that you're focused on can amount to that. And I mean, you argumented, but presumably, that's the basis from which you come up with your revenue forecast.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So I'll give you how we think about it, and I'll also caveat that I think you can find a lot of different forecasts that give you a different set of numbers. But our framework is the following. We are negotiating regularly with these OEMs on different platforms. And we have a very good sense of 2 things. First is what they plan to deploy in their cars in the short term. And then second is how they plan to scale it differently over the long term.

And so what we've tried to really factor in is a combination of the intelligence that we have from third-party sources, but also the intelligence we have from our OEM partners. And that's what's reflected in our addressable market.

Now when you look at our revenue forecast, we're forecasting greater than $9 billion revenue in fiscal '31 against a TAM of approximately $100 billion. So we do have a significant room beyond what we are forecasting in terms of what remains in the TAM, and so we're excited about it.

Vijay Raghavan Rakesh - *Mizuho Securities USA LLC, Research Division - MD of Americas Research & Senior Semiconductor Analyst*

Vijay from Mizuho. Just a quick question on the domain controller side. Can you talk to what the dollar content increases as you go from domain controllers to zonal controllers to the central compute?

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Yes. So on domain controllers, there is a range depending upon complexity, and there are also multiple instances of domain controllers, depending upon the type of vehicle. We are not getting specifics to the dollar content itself. But I think safe to say that there are going to be between 4 and 10 zonal controllers in a vehicle, depending upon the tier of the vehicle.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

And maybe just to add to that, Vijay, I think the best way to think about it is what is the total addressable SAM we would have by tier, and that's where we tried to give you this range of $200 at the low-tier, $3,000 at the high tier. And really, there is a very significant range within that not just across tiers, but also OEMs. And this is just one of the vectors that drives the scale.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Samik from JPMorgan. So maybe this is a question for both Nakul, and Cristiano you as well. As you think about the different parts of the portfolio and you're discussing with automakers out to sort of 2030 and their plans for vehicles then, what parts of the portfolio become standard on a

vehicle maybe due to mandatory regulatory sort of aspects or generally what the automakers want to make sort of standard on vehicles versus what remains a premium option, something that's more discretionary?

And the other thing that I wanted to ask is about like automakers have traditionally used more than 1 supplier. Is the technical complexity now so much greater that they're saying, let's just stick to 1 sort of technology partner here along with your One Technology Roadmap?

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Very good. Maybe I'll start, Nakul, and you can talk about it. So the first question, I think there's a combination of things. They're a combination of the ability to basically start with standard features and have the ability to have mid-cycle upgrades. I think the industry is changing right now with the mentality that you probably will want to update software and electronics within a short period of time versus their ownership of the car.

But there's another thing that is also happening and it has an inflection expanding the TAM as well. We're providing modularity and scalability that actually allow features that were not supposed to be standard on entry-level cars to be also offered as standard. And I think there's an opportunity to increase in this both directions. Nakul can give us some specific examples of that as well.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Yes. I think to your first question, Samik, if you go back to the slide on the digital cockpit, we are seeing a very rapid transition where features that were considered premium and the very next generation actually are becoming very broadly deployed. Same is starting to happen. It is a bit region-specific in ADAS as well, where certain functions that you might consider were luxury, as competition increases in a specific part of the market, start to become very standard.

To your second question, it is actually a very good question. And what we are actually seeing is direct relationships with OEMs now. So the contracts that we are signing are directly with OEMs. And what OEMs have to do, as they do a lot of in-sourcing of development, is to build a multigenerational partnership with a technology partner. And because we are so broad-based in terms of semiconductors, software, services platforms across a wide variety of domains, in some sense, automakers have to make that choice. And that's why the Snapdragon Digital Chassis actually fits in very much in terms of the types of choices that automakers have to make around our technology partnerships.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

So let me add to the answer, and I'll give a practical example. If you look at traditionally the auto industry, you will have a specification for certain components of the car, including the electronics. And then the OEMs will ask, for example, different Tier 1s to provide solutions. And in case you have a multi-sourcing solution for that component.

Now it's a little bit different. Now digital will start at the very beginning of how you plan the car. In the automakers, if you look at some of the new additions of capabilities, it's actually software. They've been adding a lot of software. So then it gets down to the conversation about what is more important for you. This speed in rates of innovation and the ability to add capabilities to the platform, or the multi-sourcing of the platform? And we've seen that with many other industries.

So the simple answer to your question is you see now a senior level engagement. I hopefully will be able to demonstrate through the presentation the number of CEOs that we have been engaged to in this industry, because they have to make the right choice on the platform and then build on top of the platform. And that's very different than how the industry used to be.

Christopher Adam Jackson Rolland - *Susquehanna Financial Group, LLLP, Research Division - Senior Analyst*

Chris Rolland from Susquehanna. I wanted to see if you guys feel that you have everything you need to address that full $100 billion TAM. And some specific things that come to mind here. You didn't address the RF opportunity. Wondering if there's an extra adder in there.

Also, there are some that believe there's a central CPU architecture, something that resembles more of a server CPU than a PC or mobile CPU. Do you believe you have those capabilities?

And then finally, mapping for ADAS and the collection of that kind of data. Are you doing that through your partners? Is that the strategy there? And do you feel it's fully complete? Some of them may not want to share that mapping data.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Thank you. Those are great questions. So I'll start, and I'll ask Akash to talk about the RF component of the SAM, and Nakul to talk about the evolution of map for the car.

So I really like that question because the computational capabilities of the car required is increasing. And we have been saying that we actually have the ability to scale our IP road map from mobiles to what you started to see in data center performance. But there's 1 big difference. The data center power consumption and thermal is incompatible for what you want to do in the car.

And I point to the CES launch of the Cadillac LYRIQ, which is outside, when Mary Barra opened a trunk and took out like a pizza box and said, Ultra Cruise runs here. And it was like, there's no liquid cooling or anything like that. And I think that's what is unique to Qualcomm about this industry.

The performance per watt is a non-negotiable requirement, and we have been proving to scale our computational capabilities to much higher levels, approaching what you see right now in the data center.

And before I hand it over to maps and the RF, we have been very focused in looking at M&A that will augment our diversification opportunity auto in IoT. I think a great example of that is the Arriver acquisition. And you probably will see Qualcomm continue to look into inorganic options also to scale our broader IoT, especially industrial.

Akash, maybe you can address the RF part of the TAM?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Sure. So thanks for a reminder on RF. We should have definitely discussed it as well. So it is included in the TAM. As we've said in the past, we have approximately $900 million in design wins on the RF front end side, that is incremental to the $30 billion. So that's on top of it.

Here's the easiest way to think about RF front end. In handsets, when 5G happened, we introduced the RF front-end product line and we gained significant share. We're doing the same in automotive. As 4G goes to 5G, we will come in with our RF front-end solution, and that is what is reflected in the design win pipeline.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

On maps.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

I think a couple of different approaches that we are taking. One is as part of our computer vision stack, we're actually making map create a standard part of that. We've also acquired capability in-house that allows us to actually be able to create maps, look at differences between the previous version, the next version, and actually make the incremental changes that are needed for the dry policy stack.

We are partnering. We also have internal solutions, but this is an area that we're actively developing.

Unidentified Analyst

Thank you. Susan Ray. Thank you for your presentation. So I understand that you can't provide updates to guidance. But could you please provide some qualitative comments on the macro weakness that we're currently seeing?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Well, on that topic, there's really no update since what we said at earnings last time. I mean we're seeing some macro weakness in the June quarter. We said that projects forward into the second half of calendar '22. And we expected OEMs to be careful with their purchases given the uncertainty. Since then, we are following the same data you're following.

We're looking at cellphone sell-through in China, COVID impact, the economic data, and you're all aware of the data that's out there, and some of it is concerning. So we expect our OEMs to really manage this quarter-to-quarter. As they get more visibility and more stability, they'll kind of start thinking about longer term. So we'll be in the same boat as the rest of the industry.

Now when you step back, this is really about the longer-term growth story for us. We've been growing faster than market in handsets. And automotive and IoT are great secular growth areas for us. And hence the discussion today about automotive. We think there's a tremendous opportunity for us long term.

Unidentified Participant

We have time for 1 last question.

Joseph Lawrence Moore - *Morgan Stanley, Research Division - Executive Director*

It's Joe Moore from Morgan Stanley. You talked about having full capabilities kind of L1 through L5. Can you talk about what like L3, L4, L5 look like? This chip you showed us today, is it a bunch of chips you showed us today, is there video offload? And what kind of power consumption profile do you have to hit in those cars?

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

Sure. So different automakers clearly have different architectures, but maybe a couple of things to keep in mind. I think the first one is, as you start to go from L2 beyond to L3 and L4, the operational design domain gets much more sophisticated. You have to be able to support multiple more sensors. You also have to be able to support redundancy. So you have to support shadow mount capability.

The SoC architecture that we actually announced, the flex architecture, envisions all of those capabilities. And the platform, we will share more details in the coming months. But the platform is designed for us to be able to modularly scale up that same exact platform and add additional capabilities. So you have performance headroom to be able to actually scale up to L4 as needed.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

I know we're out of time, but I saw so many hands. What about we take 3 more questions? There's one right there.

Louis Rocco Miscioscia - *Daiwa Securities Co. Ltd., Research Division - Research Analyst*

Louis Miscioscia from Daiwa. I know you've made comments before about the competition. Maybe you could repeat that and go into more detail? Obviously, NVIDIA has got a pipeline not as big as yours, maybe even growing slower. Obviously, you've talked about Mobileye, and obviously, they're a major competitor. Just wondering how you differentiate from them? And just any kind of comments you might be able to make about Apple and that people love to plug their phone. And I know it's not a complete solution, but obviously, we know they're working on a lot.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

I'll provide maybe some high-level comments, and I want Nakul to elaborate a little bit on the competition. I think we're very different. And hopefully, that got reflected when we talked about our IP road map. We're uniquely positioned. We're one of the few companies who have actually capabilities across all domains. And obviously, we are gaining share.

As we look, of all the different elements of the Digital Chassis, we provide complete scalability beyond the computer vision, SoC, also the drive policy for ADAS. We have the ability to have the flexibility of build systems that you have Digital Cockpit and then ADAS sharing the same SoC. We have a broad comprehensive software portfolio that we carefully designed, over the years, preparing for this opportunity. And we have some unique things.

For example, the BMW was the very first OEM to design Mobileye. And probably the very first one to upgrade the system to Snapdragon Ride. And we have a unique whole development partnership with BMW that we have rights to the stack, and we can offer that to other OEMs. So I think we're very uniquely positioned there.

There's another comment, before I hand it over to Nakul, that hopefully you'll be able to see in this presentation. This industry is developing different than what happened on phones. And the reason for that is, is because there are many things, especially when you think about not only the hardware, but the software which is unique to the automotive industry.

Yes, you can project your phone into the dashboard of the car and the infotainment for you to listen to music, for you to watch a video, but you cannot run the dashboard. The dashboard cannot crash. The dashboard is now an essential part of even the ADAS and safety features. And there are things that are important for you as a driver to be notified and vice versa.

So what's really happening, and if you look what is unique to what we develop versus our peers, we create a software platform that we can bring all of those ecosystems to the platform. You can have your Apple CarPlay, you can have your AndroidOut, you can have Android Gas, you can have Amazon. And you can have productivity applications from Zoom and Microsoft. And I think that's a unique thing which really positions the car as a platform for all the ecosystem versus having to choose 1 ecosystem or another.

And maybe you can go a little bit in details on the company.

Nakul Duggal - *QUALCOMM Technologies, Inc. - Senior Vice President & General Manager of Automotive*

You covered a lot of points. I think the main thing that I would add is, as car companies are becoming technology companies, one of the most important thing for car companies is that they have to be able to work with the technology by themselves. This is not about relying on a traditional model. It is actually building a long-term partnership. And that is something that we, as a company, I think, have a lot of experience with. That's the history that we come from. We operate at scale. And really, the goal is to help with the auto industry's transformation.

So our approach is actually not specific to a domain or a feature or what are you going to do to deploy this specific feature. It is actually building a partnership, understanding where flexibility is needed, where they have a different opinion than us and dealing with that complexity. So it's a very different approach than, say, Mobileye that is focused on ADAS or an NVIDIA that is focused on a specific technology and its application into the automotive space.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Two more questions.

Brett William Simpson - *Arete Research Services LLP - Senior Analyst*

Brett Simpson at Arete. I wanted to ask about the services strategy for the automotive business in a bit more detail. And specifically, can you maybe talk about, on the Ride platform, how do you get paid for Arriver? What is the business model? Is it an annuity stream? How do we think about that going forward?

And also on the connectivity suite, as carmakers start embracing these car-to-cloud services and they get a subscription from consumers, does Qualcomm see their business model taking out rev share in some of these car-to-cloud models?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So on the first question, the stack is sold as a software license, and there are a variety of different models. But first of all, it is a software license for the product that we sell. And then as we upgrade that product, as we add more capabilities, we will have models that kind of build on top of that.

On the connectivity services, it is a new area, but the big opportunity really is that as all of these platforms get connected, there is a common theme, which is that you have to be able to host a variety of different standard services that really every type of transportation platform requires. And we are seeing many opportunities where there is a need to be able to provide not just device management of the platform, but host the end application and service. And we see opportunities there where there is actually a revenue stream possible. Those are all recurring revenues. So we are still in very early days in terms of maturing that. But the way that we are designing the platform is provide APIs, provide the car-to-cloud platform, and then allow that to be something that customers can build on.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Maybe I just want to reiterate what Akash said. All of the services that we talk about are just upside to the provided pipeline.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

There's one here, and then there's one back there.

Sherli Looi - *Garrison Bradford & Associates Inc. - Senior Vice President, Analyst & Trader*

I'm Sherli Looi, Garrison Bradford & Associates, and I love your company. Now it may not be fair to ask you these questions. To what extent has or will the lawsuit from ARM impact this particular segment of yours? And secondly, how will the U.S. government export regulations also impact your exposure to China?

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

Well, thank you for your questions. Thank you for loving our company, too. First one, look, it's kind of what we said. It's very unfortunate that ARM took that position. We have very broad license on both the ARM architecture as well at ARM CPUs. We're moving forward with our plans, and we will have an opportunity to respond, and we'll provide details at that time.

Then the second question was geopolitics. I think Qualcomm is in a very fortunate position. It's difficult to predict, but we have seen, in the height of the geopolitical tensions, our business in China expanding, including automotive. We probably saw some of the logos in this space. We have a large number of new entrants to the market of EV as well at established Chinese car companies working with Qualcomm.

And I will repeat what I said before, at the end of the day, strong win-win partnerships between the U.S. enterprises and the China enterprises will always be a force of stability, but we'll see what the future holds.

Unidentified Analyst

Thank you for the detailed presentation. Mihir Mehta. Thank you for the details on the $100 billion TAM. I was curious for the $30 billion of design wins. If you could break that down to digital cockpit, connectivity versus ADAS. And along with the fiscal '26 and fiscal '31 revenue guidance that you gave, does that require a guarantee of a certain level of autonomy that you're providing to the auto OEMs? And what happens if it's regulatory or government hasn't approved L4 autonomy, how would that potentially change the revenue forecast?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes, Mihir, thanks for the question. So in one of my slides, we didn't kind of break down the design win pipeline for specific numbers, but we did show like a graphical representation of how the 3 contribute to the total design wins. So I think it's something that you can eyeball and you'll be able to see how ADAS suddenly has become a very large portion of our pipeline.

I think in terms of the revenue target and regulations, the way we came up with revenue targets is just based on what we know the OEMs are doing. We have a very close contact with them by brand, by tier, by vehicle, what they're going to deploy. And the revenue targets is largely, especially for the next 5 years, really a reflection of the design win pipeline we have with them.

Unidentified Participant

We have time for 1 more question.

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

One right here.

Ivan Philip Feinseth - *Tigress Financial Partners LLC, Research Division - Director of Research*

Thank you. Ivan Feinseth, Tigress Financial Partners. So as you hopefully become the dominant onboard processor, as we get to full autonomy, it's going to involve cars communicating with other cars, cars communicating with traffic lights and stop signs, could you talk about possibly your opportunity on the other side of that connectivity?

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

It's a great question actually. Thank you for bringing this up. One thing that is also unique is, as you add all of these capabilities to the car, and then the car is connected and aware of a surroundings, now if you zoom out, you have a network of cars. And that leads to intelligent transportation, car to car, car to bicycles, car to motorcycles, car to pedestrian, car to traffic lights. And that's the essence what's behind the CV2X technology. It not only has an incredible value add for ADAS, but creates a whole new set of services for intelligent transportation at the network side. And we see this as another upside opportunity.

We have been working with companies across the ecosystem. I know we've talked about that before. I think that's one of the things, it's in the Qualcomm DNA. And looking from companies doing a roadside unit into what we think we can do with the importance of this for 2-wheelers and there's a lot of opportunities, all upside to the model.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Do you want to wrap up?

Cristiano Renno Amon - *QUALCOMM Incorporated - President and Chief Executive Officer*

All right. So I know we've run out of time. One more time, thank you. So great to have all of you here. You made our very first Automotive Investor Day, at least from our perspective, successful. Thank you so much. We're looking forward to continuing to provide updates, and it's an exciting time for Qualcomm and the automotive industry. Thank you.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Thank you.
