

Apple Worldwide Developers Conference

Company Participants

- Alan Dye, Vice President, Human Interface
- Andreas Wendker, Vice President, Tools and Frameworks Engineering
- Beth Dakin, Manager, Safari Software Engineering
- Cindy Lin, Director, Program Management for Media Products Engineering
- Craig Federighi, Senior Vice President, Software Engineering
- Emily Schubert, Senior Manager of Car Experience
- Erik Neuenschwander, Director, User Privacy
- Jenny Chen, Engineer, Apple Pencil Software
- Johnny Srouji, Senior Vice President, Hardware Technologies
- Joshua Shaffer, Director, Software Engineering
- Julz Arney, Senior Manager, Fitness Technologies
- Katie Skinner, Manager, User Privacy Software
- Kevin Lynch, Vice President, Technology
- Mary-Ann Ionascu, Senior Engineer, AirPods Firmware
- Meg Frost, Director, Product Design
- Stacey Lysik, Senior Director; OS Program
- Tim Cook, Chief Executive Officer
- Vera Carr, Manager, Health Software Engineering
- Yael Garten, Director of Siri Data Science & Engineering
- Yah Cason, Senior Engineer, HomeKit Software

Presentation

Tim Cook {BIO 14014370 <GO>}

Good morning, and welcome to WWDC. WWDC is an incredibly important event to Apple, our developers and our users. It's here that we bring some of our biggest innovations to life. And we have not stopped innovating, doing the work that will enrich people's lives for years to come, because we're all looking forward to a more hopeful tomorrow. That's why we believe it's so important to have WWDC this year. And while it cannot possibly feel the same in here without you, I can assure you that we have a great show ahead of us. This year, we're delivering the conference in a whole new way to all of you around the world directly to your home. And we want to welcome you to our home here at Apple Park.

I'd like to first talk to you about two big things that are happening in the world right now. To start, I want to address the topic of racism, inequality and injustice, and to recognize the pain being felt throughout our nation, especially in our black and

brown communities after the senseless killing of George Floyd. And while the events of this past month are sadly not new, they have caused us to face long-standing institutional inequalities and social injustices. This country was founded on the principles of freedom and equality for all.

For too many people and for too long, we haven't lived up to those ideals. We are inspired and moved by the passionate people around our nation and around the world who have stood up to demand change. We must all aim far higher to build a future that lives up to our ideals. This means taking action. Two weeks ago, we announced Apple's racial equity and justice initiative with a commitment of \$100 million, starting in the United States and expanding over time, this initiative will challenge systemic barriers that limit opportunity for communities of color in the critical areas of education, economic equality and criminal justice.

We also announced something important for this community, the new developer entrepreneur account for Black developers. We want to do everything we can to foster the brightest lights and best ideas. At Apple, our mission has always been to make the world a better place and we're committed to being a force for change.

Right now, our world is also battling a virus that is affecting the daily lives of billions of people. We want to thank the dedicated people everywhere, especially our healthcare workers who have made tremendous sacrifices to take care of those in need. We've also seen the profound impact our products have had. People are relying on them more than ever to remain connected to family and friends, to do their work, to express their creativity, to be entertained as well as to entertain others.

Today, the world is counting on all of us and on the products and experiences that we create to move forward. Because throughout history great challenges have been met with great creativity and important breakthroughs. That's why we're so excited about this year's conference. This is going to be truly a unique week [ph], delivered unlike any that we've done before. There will be more than 100 engineering-led video sessions, one-on-one consultations with Apple engineers, developer forums and so much more delivered to you from different locations right here at Apple Park. And this year the conference will be available to our entire community of \$23 million developers as well as anyone who is interested for free.

Presenting the conference in this way allows us to be more inclusive than ever. Perhaps this will inspire the next generation of developers. So even though we can't be together in person, in some ways we're going to be more together than ever. Today, we're going to push each of our platforms forward in some exciting and breakthrough ways.

With that let's get started by sending it [ph] over to Craig.

Craig Federighi {BIO 6190419 <GO>}

Good morning. Great to have you here. As you can see we've got a lot to cover, so let's get started with iOS. Together with iPhone iOS is central to how we navigate our

lives and stay connected. And now we're making it even more powerful and easier to use. Our new release is iOS 14. This year we spent time rethinking some of the most iconic elements of the experience on iPhone. And we started here with a carefully considered home screen that has truly stood the test of time.

Of course, over the years, we kept the fundamentals largely the same, but carefully added features like folders for organizing your apps, widgets for quick information and personalized experiences powered by on-device intelligence that serve up just the right thing, at just the right moment. It's hard to imagine iPhone without these features now.

Well, that brings us to this year. We're doing more on our iPhones today than ever before. So we've re-thought some of the core elements of iOS to reflect this. Let me give you a quick peek.

(video presentation)

This is going to be amazing. Let's dig in starting with the home screen. Today's home screen works great. But as we get more and more apps we can end up with this, lots and lots of pages and we tend to forget what's beyond the first couple. Wouldn't it be great if there was a way to organize all of those apps without doing a thing. Well this year, we're doing just with something called the app library. It's a new space at the end of your home screen pages that automatically organizes all your apps in one simple and easy to navigate view.

Let me show you. Here's my home screen. Now like you I have muscle memory built for the first page or two. But when it comes to all of these pages, well, honestly I've lost track of where a lot of things are. And that's where the app library comes in. You can see that all of my apps are automatically organized here. In fact now with the app library I actually don't need all those pages for all my apps. So we created an easy way to hide out pages. I just go into jiggle mode, tap the darts at the bottom and check this out, I get a zoomed out view of all my pages.

I can simply tap to hide the pages I no longer need, just like that. And now with those pages hidden, app library is always just a swipe or two away. So here in app library, getting to the app I'm looking for is really easy. Up at the top I've the search field and I get all my apps organized from A to Z. Now over here on the upper left, I have suggestions, that uses on-device intelligence to show me the apps that I'm likely to need next. And on the right is recently added, giving me access to the apps that I have recently downloaded from the App Store.

And below are intelligently curated categories. So I can tap into a category like Apple Arcade and see all of my apps in that category. Well, now let's go back. You may notice that in each of these categories the apps I use most are right here at the top level. So I can launch one of these directly with just a tap. So that's App Library. We think this is going to make it easier than ever to get to your apps.

Next, let's turn to widgets. Today, widgets help me get information at a glance. But a lot has changed, since we first introduced these. Now we have Apple Watch, where we're able to surface so much information on a small screen that you wear on your wrist. Well this year we're taking all that we've learned to create a completely re-imagined experience for widgets. To start they're more beautiful and data rich, and we're introducing different sizes. So you can choose one that best fits your needs. Let's take a look at them in iOS 14.

So let's swipe over to today view and take a look at our new widgets, they're just beautiful. And the new designs are more data rich than ever. And you can see they now come in a variety of sizes. So you can pick just the right level of information for each one. Now we liked these new widgets so much, we wanted to make them even more accessible. So check this out. I'm just going to tap and hold on the weather widget, and I can drag it out of today view and on to my home screen. And watch as I move it around, the apps just dance out of the way to make space for my new widget.

Well have a second one. Just kind of tap the plus here in the upper left and grab on the podcast. I can drop it just like that. Now I'm going to swipe over to page two here and bring back up the widget gallery. The gallery is a great place to explore widgets. Now when I tap on one I can actually page through all of the different sizes available, just like this. But you know right now what I want to do is grab this widget up top. It's a really special one. It's called the smart stack. I'm just going to tap it and drop it here.

With the smart stack I can easily swipe through widgets to pick just the one I want for the moment. But what's really cool is that the smart stack can actually do this for me automatically. So in the morning, I can get my news briefing. Throughout the day find out when I have a meeting coming up. And then the evening I might get a summary of my activity for the day. So that's widgets on the home screen. We're excited to see how everyone will customize them in their own way.

Next, we're also bringing picture-in-picture to iPhone, so you can access apps on your iPhone while watching video or talking on a FaceTime call. Let me show you. So here in my home screen the Smart Stack is showing me the TV widget. So I can just tap to start playing the show. Now check this out. When I swipe to go home, the video automatically goes in a picture-in-picture right over the home screen. And when I launch another app, like notes I can keep watching.

Now I can drag the picture to another part of the screen. If I want to make it bigger. I can even pinch to zoom. And as I move between applications it stays with me. And what's cool if I can also swipe it to the side and the audio keeps playing when it's off-screen. Now here on the home screen, I can bring it back out if I want and I have controls to get back to full screen playback or I can just tap the X to close it. And that's picture-in-picture video. It's a great way to continue enjoying your video while tapping into everything else your iPhone can do for you.

And that's a quick look at the updates to the core elements of iOS. We think these new features are going to make iOS even more hep in a moment. Another iconic experience that's getting a major update is Siri. As much as Siri's advanced over the years the visual interface for interacting with it has remained largely unchanged. When you use Siri, your iPhone switches to this old screen UI obscuring your current context. So this year we've completely redesigned the Siri experience with a new compact design. It makes tasks like launching apps incredibly seamless.

For example if you say open Safari. Siri pops up the bottom of the screen and instantly launches the App. Or if you ask for information like the weather results appear at the top of the screen, just like a notification. Now this is especially great when there's information you want to reference on screen. For example, you could ask Siri to add to your grocery list. So that's the new Siri design in iOS 14. But the UI is only part of the story.

To tell you more about how we're making Siri smarter than ever, I'll hand it off to Yael Garten.

Yael Garten {BIO 21510522 <GO>}

Thanks, Craig. Siri is getting smarter and even more helpful every day, and I'm really excited to share the latest updates with you. Siri helps you in a ton of little ways everyday, playing the morning news, ordering a coffee, getting directions, setting the alarm before going to bed and so much more. In fact, Siri is helping so many of you with a staggering 25 billion requests each month, and Siri is getting more helpful every day.

Siri's always been great for getting information and now has over 20 times more facts than just three years ago. For more complex questions like how do hybrid cars work, or what causes seasons, we recently introduced answers from websites across the Internet, enabling Siri to help you find even more answers. Another way Siri helps us with communication, like sending messages. This year, you can now ask Siri to spend an audio message and Siri will start recording. This is great, when you really want to have the emotion of your voice come through.

Another popular way to send messages with your voice is using dictation. Keyboard dictation uses the same speech recognition as Siri. And leveraging the power of the neural engine we are now able to run dictation on device. This provides great accuracy and privacy. When communicating with someone in another language, Siri can help with translations. This year we're expanding to support many new language pairs. This is hugely popular, but we know our users want more than just translating phrases.

They want to have entire conversations and we believe conversations between languages should feel natural and easy and have the ability to stay private. That's why we are introducing a new app called Translate. It is designed to be the best and easiest to use app for conversations and it can work completely offline, keeping your conversations private. Using advanced on-device machine learning and the powerful

neural engine, you can translate your text and voice between any combination of these 11 languages.

So I could have a conversation with someone in Mandarin and they could have a conversation with someone in Russian. Just tap on the microphone and say, what are your store hours? (foreign language) You get back the text and audio right away. And just turn the phone to landscape to open conversation mode. We've designed a side by side view that's easy for two people to know which side to follow in the conversation. This mode is incredibly intuitive, with just a single microphone button because the app intelligently detects the language spoken and shows translation on the correct side of the screen.

Translate will make communicating between languages easier than ever before, connecting people in new ways and we can't wait for you to try it.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Yael. Next up, messages. Messages is how many of us communicate with people most important to us and now we're using it more than ever. Compared to just a year ago we have a record number of users sending a record number of messages and we've seen people use messages more and more to keep in touch with their closest groups. This year, we're introducing a new way to stay connected with your most important conversations giving you new ways to express your identity with Memoji and making big changes to how we communicate in groups.

To tell you more, here is Stacey Lysik.

Stacey Lysik

Thanks, Craig. First, let's get started with conversations. From the beginning, messages was designed to make it really easy to get to your newest messages. With so many active conversations, sometimes it can be tough to get to the ones that are most important to you. So we are introducing a new way to let you stay connected to your most important conversations, by letting you pin them at the top of your list, so you can always get to them. And you can see messages as they come in with a beautiful animation underpinned.

Next, let's talk about expressing yourself with the Memoji. There are over 1 trillion ways to customize your identity with Memoji. In iOS 14 we're adding even more ways to create your look, over 20 new hair and headwear styles to let you reflect your hobby, obsession and personality. We've also added something that's even more relevant today face coverings. And we're adding more age options too. My favorite way of using Memoji is with Memoji stickers. And now we have three brand new Memoji stickers that let you send a hug, a fist bump, or even a blush to your friends.

Last let's chat about groups. When you're talking to a group sometimes there so much going on it can be hard to keep track of the conversation. So this year we're going to help you bring order to the chaos. First, we're adding in line replies that let

you apply directly to a specific message. You can view replies in the full conversation or you can view them as their own thread. So you can focus in on the specific topic.

To make it even more clear who a message was met for we're introducing mentions. With mentions, you can just type someone's name to direct a message to them. And now you have the ability to only be notified when you're mentioned in the group conversation. And check out the top of this conversation with an all-new design for how groups appear. It lets you see all the members of your group, where the most recently active people are shown largest. And for the first time ever you can create a unique visual identity for your group by setting a group photo, our customizing your group's look with an Memoji.

Inside the conversation you see group member's photos around the image. Of course it looks great as a pin. You know who's most recently commented in the group because their photo will appear on the outside of the pin, and what's coming to messages in iOS 14, all new pinned conversations, fun updates to Memoji and powerful improvements to groups.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Stacy. Next, let's take a look at features that help us while we're out and about. Now we know that life looks very different for many of us right now. But it won't always be this way. And as things start to open up, we have a new set of features that will help us explore the world again, starting with maps. Apple Maps is the best way to navigate and explore the world, all while protecting your privacy.

Over the past several years, we've added many great features and of course we've been rebuilding our map from the ground up. Our new map finished rolling out across the US earlier this year and brought with it better navigation and far richer detail for roads, pedestrian pass, land cover and more. The new map also offers more accurate information for places and allows us to build incredible features like look around. Maps has come a long way and people have noticed. Just look at this quote from Fast Company, Apple Maps has improved by leaps and bounds and is a formidable rival to Google Maps. It's also arguably got the better UI and by far, by far the better privacy policy.

We're excited to announce we're bringing our new map to more countries later this year, including the UK, Ireland and Canada. In addition to the rich detail and improved accuracy the new map serves as the foundation for many great new features. In iOS 14, we're adding things that will make it easier for people to find places they love and help them get to where they're going in ways that are better for the environment. To tell you more, I'll hand it off to Meg Frost.

Meg Frost

Thanks, Craig. First let's talk about finding great places. We've millions of ways [ph] to discover great new places, whether they're planning their next big vacation or just looking for something to eat nearby.

In iOS 14 the Maps team will be working with some of the world's most trusted brands to offer amazing guides; guides for great places to eat, shop, meet friends or exploring cities around the world. You can save guides, you can easily get back to them later and the best part is that they automatically update when new places are added, so you always have the latest recommendations. In addition to helping you discover great new places Maps help you get there in a way that's better for the planet.

For years Map's made it easy to navigate using environmentally friendly options like public transit and walking. With iOS 14 we're introducing great new features to help our users reduce their carbon footprint, and our first one is also our most requested, it's cycling. We've done an cycling experience that helps

You get around town on your bike. We are adding a dedicated cycling option to maps which allows users to ride their bike along bike lanes, pads and roads. Maps takes elevation into account to let you know if you are in for a challenging whole [ph] workout or a leisurely flat ride.

You can also see if you are route includes quiet or busy roads. We even let you know if you have a steep passage coming up or if you need to carry your bike up the stairs. You can also choose to avoid stairs altogether. With iOS 14 we're bringing cycling to New York City, LA, the San Francisco Bay Area, along with a number of cities in China, like Shanghai and Beijing. And we'll be adding many more cities in the coming months.

For environmentally conscious drivers we are also introducing EV routing. If you have an electric car maps is going to help you eliminate range anxiety. With iOS 14 Maps will track your current charge and factor in things like elevation and weather to automatically add charging stops along your route. And Maps will know which type of charger works for your car, making sure to only route you to compatible stations. We are working with a number of manufacturers to support EV routing in their vehicles, including BMW and Ford and we'll be adding many more in the near future.

Cities around the world are also working to improve air quality and reduce traffic. So we're adding congestion and green zones to Maps to easily see where they are along with alternate routing options. In addition, drivers in China can securely store their license plate number on the iPhone and Maps will let them know which days they can enter congested city centers based on that number. And those are just some of the great new features coming to Apple Maps in iOS 14, making Maps the best product to help users explore and navigate their world.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Meg. And now on to CarPlay, which has transformed the driving experience for iPhone owners by being a smarter, safer way to use the apps you love in your car. CarPlay is everywhere and it's incredibly popular. Here in the US, it's available on basically every new car. And worldwide, it's available on over 80% of new cars sold and has quickly become the default in-car experience for so many people. People

love CarPlay and we get some really passionate reactions. Joanna Stern says it makes her life infinitely better. We have some great updates for iOS 14.

First up, we have new wallpaper options, perfect for the car, and we're adding support for new categories of CarPlay apps, parking, EV charging and quick food ordering. In addition to this, we're really excited for the next step in how we're transforming your relationship with your car by rethinking car keys. They've been around for over 100 years, but they become big, bulky and ripe for re-imagining. To tell you more about what we have planned, let's go to the garage with Emily Schubert.

Emily Schubert {BIO 21736971 <GO>}

Thanks, Craig. I'm excited to introduce a digital version of car keys. Now you can leave your keys at home and unlock and start your car with your iPhone. And the very first car to support this will be the new 2021 BMW 5 Series. Let me show you how it works. It's super-simple. It uses NFC and you just tap to unlock. And I place my phone on the charging pad and then push to start.

But this goes beyond just one less thing you have to keep in your pocket. Digital keys have security benefits. They live in a secure element of your iPhone and if it goes missing you can turn off your keys remotely, via iCloud. They are even easier to share than a physical key. Copies don't involve trips to the dealership. And you can share from wherever you are with iMessage.

Let's give Craig a key so he can drive home after we're done here. With each key you share, you can set options, like a restricted driving profile, perfect for teen drivers, which is tempting but we'll Craig full access.

Craig Federighi {BIO 6190419 <GO>}

Full access. Thanks, Emily. The new BMW will be available to customers next month. In addition to adding this feature in iOS 14, we're also enabling it in iOS 13, so customers can use their car keys even sooner. Of course, we want this to work in any car. So we've been working on standards with industry groups, and this is just the beginning. We're working on technology to leverage our U1 chip which uses ultra-wideband technology for precise spatial awareness. So you'll be able to leave your iPhone in your bag or pocket and still securely unlock and start your car. We expect to see support for this standard starting in new cars next year.

Now let's turn to the App Store. 12 years ago, we revolutionized the industry with the launch of the App Store. Today, we have so many amazing apps that offer a rich set of experiences we can truly say that for everything we want to do, there is an app for that. So now it's time for us to extend the success of the App Store and make apps available and accessible in whole new ways.

What if you could have the right app you needed at just the right moment? Let's look at what it would be like if you did.

(Video Presentation)

An app clip is a small part of an app. It's a light and fast and easy to discover, so you can quickly get what you need right when you need it. Everything about App clips is designed for speed. They start with this card which quickly pops up and with just a tap you can launch the App clip. You don't need to enter credit card numbers, because App Clips can use Apple Pay for payments. And you don't have to manually log into an account because it can take advantage of sign-in with Apple. App clips won't clutter your home screen, and will only stay along as long as you need them.

But you could easily launch recently used app clips from the new app library. It's always easy to download the full app and this makes App clips an easy way to discover more of what the App Store has to offer. And discovery is key. App clips are all about getting to a part of an app at the moment you need it. So it was critical that we made them really easy to find. App clips can be easily discovered and launch from the web.

You can launch app clips for messages when friends share them with you, when you want to order takeout from a restaurant in Maps you can launch your app clip right from a place card. You'll be able to tap on NFC tags out in the world on things like parking meters or you can scan QR codes to launch App clips that work with products you purchase. The best way to discover app clips will be with the new Apple designed app clip code. So when you see one, you'll know that there is an app clip waiting for you.

They incorporate both a visual code and NFC, so you tap on them or scan them with the camera to bring up an app clip. App clips will be great for businesses that already have apps. But we want to be able to use app clips everywhere, including smaller spots that may not have their own app. So we made it possible for apps like Yelp, which support multiple businesses to create App clip experiences for each of the places they work with.

Developers will create app clips from a part of an app using X code and the full power of the SDK. To ensure that they launch quickly, they'll need to be less than 10 megabytes in size, and that's App Clips, immediately discoverable, small in size, so they launch fast, integrated Apple Pay for easy payment, sign in with Apple for quick and privacy friendly login and the option to download the full app from the App Store when you want to keep it around. We can't wait to see all the App clips developers will create. And that's iOS 14.

It's a huge release that transforms the core experience of iPhone with redesigned widgets right on the home screen and a new way to organize your apps with the app library. It has incredible updates to some of the most popular apps with powerful improvements to messages and maps and introduces a whole new way to tap into apps with App clips.

And next up, iPad OS.

(Video Presentation)

Okay. We've made it. All right, well, let's jump right in. iPad OS builds on all the amazing features of iOS, while adding unique capabilities that deliver a distinct experience for iPad, like using Apple pencil for taking notes, markup, an illustration, a re-imagined trackpad experience that lets you interact with iPad in a whole new way, and unmatched AR experiences with ARKit and the amazing new LiDAR Scanner in iPad Pro. All of this combines to put iPad into a class of its own.

iPad excels at every type of input, and is a product to do anything and everything, which brings us to this year and our new release iPadOS 14. Let's start with experience. This year, iPadOS delivers unique made for iPad designs, that's a great advantage of the iPad's large multi-touch display. The iPad has always been about the apps.

In the beginning, we focused on giving the ecosystem of iPhone apps a larger canvas to deliver new and unique experiences. This quickly sparked an entirely new set of apps designed for iPad first, with immersive experiences that transform this magical sheet of glass into whatever you needed it to be. We're proud of the over 1 million apps on the App Store today designed just for iPad. With customers continuing to push their iPads further than ever before, we're extending the design language of iPad to make apps more streamlined and more powerful.

To give you a live look at these enhancements, I'll hand it over to Josh Shaffer.

Joshua Shaffer

Thanks, Craig. Let's take a look at some of the enhancements to iPad OS. The first you'll notice are the same redesigned widgets that you saw in iOS 14. They look great on iPad as well, and they give you information at a glance whenever you go home. But let's see some of the improvements in the apps, starting with photos.

iPad is the perfect device for browsing your photos. It's large canvas lets you immerse yourself in all your favorite memories, and this year we're making it even easier to browse and organize your photos with an all-new sidebar. With just a tap of this button I can reveal the sidebar with all the core functionality of the app in a single location. My photos remain front and center. But now I can quickly tap to move between parts of the app. The sidebar is a really powerful way to organize your photos to. I can easily drag a photo to the sidebar and then just drop it to add it to an album.

We've brought this sidebar to many apps across iPadOS, like notes where it provides quick and easy access to all your folders. And files where we've consolidated navigation into the sidebar for a streamlined new design. We've also streamlined the toolbars adding new drop down menus that consolidate functions into a single easy to access button. I can just tap to change views like this. And for even quicker access I can just tap and drag to change the sort order all in a single motion.

You'll find the same approach across other apps like calendar, where we've brought controls into a single toolbar at the top providing more space for your content and a single unified place to access all the apps functionality. Finally music has been updated to take even better advantage of iPad's large screen. The sidebar in music makes it easy to move between views. I can quickly jump between the new listen now in my playlists. And once I start playing a song, I can bring up the brand new full stream player, where I can see rich album art, transport controls and lyrics all in one single view.

And these are just some of the enhancements that are coming to Apps and iPad OS.

Craig Federighi {BIO 6190419 <GO>}

We're really loving these new app designs, but there is more. Starting with Siri, the new compact Siri design that you heard about in iOS 14 is especially useful in iPad. Results appear at the bottom right corner allowing you to easily reference the App while using Siri.

And we applied the same approach to other parts of the experience, like calls. Now today when you receive a call on iPad you see this. Whatever you were working on is suddenly completely covered with the incoming call screen. Not cool. Wouldn't it be nicer if instead, you saw this? That's much better. Now an incoming call is presented with a compact notification, that doesn't take you out of context. And you can simply tap to answer or flick it away to dismiss. And this applies to all calls, including those from your iPhone or third party VOIP apps like Skype. And of course we're bringing this to iOS as well.

We think our iPhone customers are going to love it. Now there is one more key experience we've redesigned for iPad this year, and that's search. Today search is a full screen experience, and sometimes you can lose track of your context. So we've redesigned search with a new compact design. You can start a search from anywhere like the home screen or over any app. And this makes it easy to find what you need without feeling like you've left the App you're working in.

But we didn't just redesign it. We've rebuilt search from the ground up, to be universal, becoming a single destination where you can start all of your searches. First, we made it better than ever as an app launcher. You just start typing a few characters and you can instantly get to where you're going. It's also great for finding contacts to message or call or documents. You can even search directly into apps like keynote, messages, mail or files or look at information about people or places. And it's also a great place to start all of your web searches as well.

As soon as you start typing you get relevant suggestions to complete your search and you can get to your web search results with just a tap. And search now makes navigating to your favorite websites, just as easy as launching an app. Just type a few letters and then tap it will take you right to Safari. So those are some of our updates to the iPad experience and of course you get the new widgets and all the other great App enhancements from iOS 14.

Next, we want to push forward your ability to express yourself creatively, with improvements to Apple Pencil. Apple Pencil is a game changing tool that turns iPad into a professional drawing canvas, a great way to mark up and sign documents and the ultimate note taking device. What many people love most about taking notes with Apple pencil is how they can express themselves in a free form way. Mixing handwriting and drawings can be the best way to capture your thoughts. Now the challenge is, when you want to change things afterwards. Here working with handwriting just isn't as easy as with typed text.

Now we sometimes take it for granted, but with typed text it's so easy to select, copy and paste into another document or even just make space for more text. Well, this year we're going to make handwriting just easy and just as powerful, but that's not all. Our customers tell us that, once they have an Apple pencil in their hand, they don't want to put it away. So this year we're bringing Scribble to iPad. So you can hand write into any text field and it will automatically be converted to text.

To show you all of this in action, I'd like to welcome Jenny Chen for a live demo.

Jenny Chen {BIO 20335880 <GO>}

Thanks, Craig. I'm really excited to show you some of the great new features that we have for Apple Pencil and iPadOS this year. One of the great parts about taking notes with the Apple Pencil is that it really let you work in a free form way. I can just start writing anywhere. And it's not just about text. I can also express myself with drawings or sheets, but sometimes you want that more professional cleaned up look and so now when I draw a simple shape and pause at the end it'll automatically convert to that ideal shape. And we're smart about it, retaining the same size, an angle that you drew it at.

In addition to shapes, we've also made huge improvements to our handwriting recognition. So now when I write I can easily make a selection using the same gestures that I use for type text. I can double tap to select a word or double tap again to select a line. Thanks to our advanced on-device machine learning you'll notice, how we can flex the handwriting, while avoiding the drawings nearby.

Now that I have the selection I can easily change the color or move it around the document. It's also perfectly easy for me to make space for more room to write. We think that this will make note taking with Apple Pencil even better, and now you don't even have to put it down when you want to do something else.

Let's say you want to search for Edison bulbs, in Safari. Using Scribble, I can just write directly into the text field. And it automatically gets converted to typed text. It also works in any text field. So I can easily add a new reminder to my shared reminders list with my husband. I've also been learning Chinese. So I want to surprise him with some of my progress and skills. I use scratch and delete light. And then I can use Scribble to write new, and then light fixture in Chinese. You'll notice how Scribble recognizes both English and Chinese, in the same line.

And this also means that we can build on this technology to deliver other great features like data detectors. We can automatically detect what you write, like phone numbers, so I can make a phone call or addresses, so I can look up directions. We can use these features together to do even more with your handwriting. Let's say I want to use my handwriting in another app. I can easily select what I want. Tap the new copy of text from the call up bar and then paste it into an app like Pages and it's automatically converted to typed text.

We're really excited about these awesome new features that we'll think will let you do even more with the Apple Pencil.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Jenny. So those are the enhancements to pencil. Just one part of an amazing release with Scribble for handwriting into any text field, a whole new way to work with your hand written notes, broad enhancements to the app experience and of course iPad users also benefit from the great features you already saw in iOS 14 and much more that we didn't have time to talk about. So that's iOS and iPadOS.

Next, let's talk about AirPods. From the one click set up to the automatic pairing with all your devices, to how they pause your audio when you take them out, people love the magical experience that AirPods deliver. Now we're bringing even more magic to AirPods. To tell you all about it, here's Mary-Ann Ionascu.

Mary-Ann Ionascu

Thanks, Craig. We have some amazing updates coming to AirPods, starting with automatic switching. AirPods will now seamlessly move between their devices without you having to manually switch them. Let's say you just finished listening to a podcast and you pick up your iPad to watch a show. AirPods will magically switchover and later you start a video conference on your mac. AirPods will automatically switch again. And if a phone call comes in, the audio in your AirPods route will right back to your phone. We also have an exciting new feature coming to AirPods Pro, spatial audio.

You know the experience of being in a movie theater with a state-of-the-art surround sound system, one where the sound not only comes from in front of you, but also from the left, the right, behind and even from above you. Well, we are thrilled to bring that same immersive experience to AirPods Pro. But it turns out, it's a lot harder to do when you only have a single ear bud in each year. So our team created advanced spatial audio algorithms for AirPods Pro that replicate the movie theater experience.

By applying directional audio filters and suddenly adjusting the frequencies each ear receives we can play sounds virtually anywhere in space, creating an immersive surround sound experience. But to truly deliver on this promise, we had to factor in real life situations. First people move their heads. For an authentic surround sound

experience, you need the sound field to stay fixed. So the voice feels like it's coming from the actor and not some random point in space.

So we used the accelerometer and gyroscopes in AirPods Pro to track the motion of your head remapping the sound field so it stays anchored to your device even as your head moves. And it's not only your head that can move, but you might move your iPad or iPhone as well. That's why we constantly compare the motion data from your head and your screen, to understand how they're moving in relation to each other.

So if your bus turns the corner or your plane banks the sound stays in sync. The result is the surround sound experience that keeps you in the middle of the action, no matter where you go. Special audio for AirPods Pro will work with content encoded in 5.1, 7.1 and even Dolby Atmos.

Craig Federighi {BIO 6190419 <GO>}

Thanks Mary-Ann. I've been using the new spatial audio and I think you're all really going to love it. All right. Next, let's head to the fitness center to hear the latest on watchOS from Kevin.

(Video Presentation)

Kevin Lynch {BIO 1958128 <GO>}

Thanks Craig. Since we launched Apple Watch, it's completely redefined what a watch can do, and this has been incredibly meaningful work. Apple Watch not only helps you stay connected and active, it's become an intelligent guardian of your health, enabling you to take an ECG, detect falls and call emergency services for you. It's impacting lives in ways that were inconceivable five years ago.

The power of Apple Watch is not only its built-in features, but how developers have personalized it for you. We introduced the App Store and watchOS 6 and there are now over 20,000 watchOS apps available. These apps bring the information you care about most, through just a glance at your watch face. And we're taking this even further in watchOS 7, starting with complications.

Until today an app could appear only once part of the time on a watch face. In watchOS 7 developers can enable multiple complications, making even more richly personal watch faces. So if you'd like to use Dawn Patrol for surfing, you can create your own surf watch including water, temperature, swell and wind speed predictions for your favorite beach. Or new parents can use Glow Baby to see nap, changing and feeding times all in one phase, while Nike run club can display stats like pace from your last run and your weekly run goals.

We're also bringing rich complications to more phases, including a fresh chronograph phase with an integrated tech emitter and an updated extra-large face

with a huge rich complication, right in the center. And configuring watch faces has been redesigned, so you can easily select which information you'd like to see. As developers with watchOS 7, you can now build your rich complications with native SwiftUI.

While there are so many ways to configure watch faces, you may not have gone in and set these up for yourself yet. That's okay. With watchOS 7, we're making it super easy to share watch faces. So you can discover a phase that works perfectly for you. To do this, we're introducing face sharing. You'll be able to discover curated faces with third-party apps on the App Store or discover a favorite watch face right on our website., or receive watch faces directly from friends and family.

Let's take a look at how this works. When you see a watch face you like, you just press, add up a watch face. If the watch face uses some apps that you don't have yet, you will be offered each one right here, so you can easily get them if you like. And the new face appears right on your watch. If you'd like to share a face you've created yourself that's also really easy. Just long press on the face, tap share, pick a contact and send. Developers can offer pre-configured watch faces right from their apps. You can even share watch faces across social media. It's a great way for the community of Apple Watch wearers to connect and help each other discover all the amazing things Apple Watch is capable of.

Next, let's talk about Maps. Maps is great for walking, driving and transit directions. And now in watchOS just like in iOS 14, you can get cycling directions. You'll see a variety of routes with information like time, distance and whether there are bike lanes. You can preview travel time, and elevation changes and navigate with turn by turn directions that are large and easy to read. Maps can direct you to dismount and walk your bike or even take the stairs to save time. You can also search for and add places optimized for cyclists, like bike repair shops.

Now to tell you about how we're advancing workouts, please welcome Julz Arney.

Julz Arney

Thanks, Kevin. The workout app uses algorithms that are smartly tuned to track all aspects of your training. It's one of the most used apps on Apple Watch and we've continued to add support for new workout types every year. And in watchOS 7, we're adding dance. Dance is a total body workout that's great for your heart. It makes you more fit and flexible and you're guaranteed to have fun.

Whether you're doing hip-hop, Latin, Bollywood or simply cardio dance, the workout app now tracks some of the world's most popular styles of dance for fitness. Getting the most accurate credit for dance represented a unique challenge. Our movements aren't always repetitive or synchronized leg movements, like in running and walking. The solution was to use advanced sensor fusion. In dance, we combine data from the accelerometer and the gyroscope to detect the difference between dancing with just your arms, just your lower body or when you put it altogether and dance with your

entire body. Then we add in heart rate data for the most accurate calorie burned calculation.

WatchOS 7 also tracks accurate calories for core training, those exercises for your abs and back. Functional strength training, a workout type that helps you get stronger and move better for everyday activities, and also Cooldown to add on to another workout when you want to continue with easy moves and stretches as you bring your heart rate and breathing back to normal. Of course, you can track your progress for any of these new workouts inside the activity app on iPhone which is completely redesigned in watchOS 7.

The app now features the new summary tab that gives you an easy way to see your activity history, workouts and trend all in one screen with you. With the new focus on easy navigation and summary metrics, the App is getting a new name as well, Fitness.

Back to you, Kevin.

Kevin Lynch {BIO 1958128 <GO>}

Thanks, Julz. Apple Watch helps you meet not only your fitness goals, but also helps support your health, with features such as cycle tracking, the breathe app and noise notifications. And we're going to be adding even more capabilities this year in watchOS 7. We'd like to share a couple of them with you today, starting with one of the most requested features for Apple Watch, tracking your sleep. To tell you about this, over to Vera Carr.

Vera Carr {BIO 21858302 <GO>}

Thanks, Kevin. There are many ways to look at sleep. Scores, advanced monitoring or sleep cycle analysis. We are taking more holistic approach to sleep by leveraging the devices you use everyday to not only track your sleep, but to support you and actually meeting your sleep duration goal. That's also choosing not only when you would like to wake up in the morning, but also when you would like to go to bed.

For most of us, setting a goal is easy, but getting to bed on time, that's the hard part. Experts say that establishing a bedtime routine helps the body transition from wakefulness to sleep. So we are offering wind down. It can help you get to bed on time by minimizing distractions and creating a personalized routine. Let's look at how this works.

In the evening ahead of your bedtime, your phone can display the wind down screen to help you transition mentally before you go to bed. It creates the calm lock screen experience and turns on do not disturb for you. You can also setup shortcuts for simple things you may like to do to help you prepare for bed. These might include using your favorite meditation app or playing relaxing music. Once it's time for bed, your screen will dim and your watch will go in to sleep mode, which looks like this.

The screen will be off during time of bed, so it won't bother you and a tap displays this simple face. When it's time to wake up, you have a selection of gentle and effective alarm sounds or a silent tactic only wake up, alarm, so you don't disturb your partner. Once you're up, you'll see a friendly greeting easing you into the day. It also shows you battery level, so you can remember to charge in the morning.

Apple Watch tracks your sleep using a machine learning model that senses your motion and even interprets the micro movements caused by the rise and fall of your breath, providing signals for when you're awake and when you're sleep. There is an updated sleep section in health app including a view of your trends over time. Sleep schedules, wind down and sleep mode are also available on iPhone without a Watch in iOS 14. We know you'll enjoy using Watch throughout the day and now throughout the night.

Kevin Lynch {BIO 1958128 <GO>}

Thanks, Vera. In addition to sleep keeping your healthy there's another preventative care item that's so important particularly now, hand washing. In watchOS 7 Apple Watch is the first watch to deliver automatic detection when you start washing your hands and sensing of how long you actually wash. Our approach here is using machine learning models to determine motion, which appears to be hand-washing and then use audio to confirm the sound of running water or squishing soap on your hands.

During this you'll get a little coaching to do a good job, you'll see a countdown along with haptics and sounds to make sure you wash as long as you're supposed to. If you pause early, there is a plate note to keep washing. And when you're done you'll see here and feel it. That's just some of what's coming this year in watchOS 7 including discovering and sharing faces, new workout types, sleep and hand-washing detection and other new capabilities like Siri language translation.

And that's Apple Watch. It's time for you to join Craig again to talk about something that's important to all of us. Here We go.

(Video Presentation)

Craig Federighi {BIO 6190419 <GO>}

At Apple we believe privacy is a fundamental human right. So we build it into our products from the beginning of the design process. Privacy matters now more than ever, and because our devices contain the most sensitive information, all of our product work is grounded in a set of privacy principles.

First, data minimization. We use innovative technologies and techniques to minimize the personal data we or anyone else can access. Second on-device intelligence. We avoid data collection by processing as much of your information on your device as we can, rather than sending it to a server. Third, security, security protections are foundational to everything we do in privacy. And finally transparency and control. It

helps you better understand the data being collected so that you can make your own choices about how that data is used.

These principles come together across our products, in our hardware, our software and our services. At the end of the day they result in great privacy and great ease of use. A powerful example of this is sign-in with Apple, which is designed for simplicity, security and privacy and since we launched it last year users have created over 200 million accounts across a wide variety of apps and websites. And developers are seeing great usage when they adopt it.

For example, Kayak has integrated with sign-in Apple and found that their users are now two times more likely to use it than any other sign-in provider. Now one thing we hear a lot with sign-in with Apple is that people wish they could convert their existing accounts to use it. So this year we're going to enable developers to let you do just that. When you upgrade you get the ease of use and built-in security of sign-in with Apple while keeping the account that you already have.

This is another big year of privacy improvements in our products and to tell you more, here's Katie Skinner and Erik Neuenschwander.

Katie Skinner

Thanks, Craig. First let's talk about location. This year we're continuing to give you even more control. In addition to the option of sharing your precise location, you have the option to only share your approximate location with us.

Erik Neuenschwander

We're also making changes for mic and camera, so you always know when you're recording. In addition to requiring your permission this year, we're adding more visibility for current or recent mic or camera use. So if an app uses either one we will indicate that in the status bar.

Katie Skinner

Next, let's talk about tracking. Safari's intelligent tracking prevention has been really successful on the web and this year we want to help you with tracking in apps. We believe tracking should always be transparent and under your control. So moving forward App Store policy will require apps to ask before tracking you across apps and websites owned by other companies.

Erik Neuenschwander

Last, let's talk about app privacy. Today we require that apps have a privacy policy. Wouldn't it be great to even more quickly and easily see a summary of an apps privacy practices before you download it. Now where we've seen something like that before? For Food you have nutrition labels. You can see if it's packed with protein or loaded with sugar or maybe both, all before you buy it. So we thought it would be

great to have something similar for apps. We're going to require each developer to self-report their practices.

Katie Skinner

We'll show you what they tell us. You can see if the developers collecting a little bit of data on you or a lot of data, or if they're sharing data with other companies to track you and much more.

Erik Neuenschwander

We're going to put this information on product pages in the App Store. So for each app, you can see highlights of their privacy information before you download it and we're going to include this in all of our App Stores. Back over to you, Craig.

Craig Federighi {BIO 6190419 <GO>}

Thanks Katie and Erik. These are some of the ways we're strengthening the privacy of our platforms and bringing new features to give users even more control. And one of the places where privacy matters most is your home. Like most of you in the past few months, I've spent more time at home than I ever imagined. It's more clear than ever just how important it is to live in a home where the technology just works. And that brings us to some great new features we're bringing to the home this year.

All of these features share few key attributes. First, anything we developed for the home should be easy, from initial setup to everyday use. Just like how tap of your iPhone can automatically configure an Apple TV. Second, home products should never compromise your privacy. That's why your Siri request use a random identifier, not your Apple ID. And finally your devices should all work better together, like how AirPlay lets your share from your iPhone straight to the TV.

And when things are easy, private and work together seamlessly your home is more enjoyable. Whether you're watching TV, listening to music or getting the most out of your smart devices. To tell you more about what we have in store for the home, let me pass it to Yah Cason.

Yah Cason

Thanks, Craig. Let's start by talking about the smart home. With HomeKit, we've given developers a robust framework to create smart home accessories that are remarkably easy to set up, all while being end-to-end encrypted to your Apple devices. Already there is a rich ecosystem of devices available, but we want to make it even easier to build products that work across more homes. So we formed an alliance and partnered with Amazon, Google and other industry leaders to define a new interoperability standards for the smart home. We open sourced HomeKit to ensure ease of use and privacy are core to this effort.

And any accessory using HomeKit or this new standard will work incredibly well across all your Apple devices and you control it all in the home app, the most secure way to manage your smart home. Adding new devices to your home has never been easier. Simply tap or scan to set up an accessory, and in iOS 14 after you add an accessory, the home app will now suggest useful automations so you can immediately put a new device to work for you.

Automations are rules that set your homes to autopilot, like automatically time on your porch lights when motion is detected, or having the garage door open as you arrive home. And now when you open the home app you'll see a new visual status right at top that prioritize the accessories which most need your attention. You can easily see if you left the door unlocked, or the lights on and quickly control them.

Let's take a closer look to one of the most popular categories of HomeKit accessories, lights. Millions of us have already added smart bulbs to our homes, many of which can change color on demand. In iOS 14, we're introducing a feature to help you get the most out of those bulbs, adaptive lighting. Adaptive lighting automatically adjusts the color temperature of your lights throughout the day, turn it on to ease into the morning with warm colors, stay focused and alert mid-day with cooler ones and wind down at night by reducing blue light. Adaptive lighting ensures you get the right color at the right time.

Another popular smart home category is cameras. With HomeKit secure video, your cameras are completely private. And in iOS 14 we're making your cameras work even harder for you. You will be able to define activity zones that focus on the most important areas. This is great if you face a busy sidewalk and only want to be alerted when people actually walk up to your front door.

Another powerful feature we're bringing to cameras is face recognition. HomeKit cameras and video doorbells will now provide even richer notifications telling you, who's thereby leveraging the friends and family you already tagged in your photos apps. And face recognition extends the HomePod announcing who is at the door. And with Apple TV, you'll get a live view whenever someone rings the bell.

In fact all your HomeKit enabled cameras will be directly integrated with tvOS 14 so you can quickly bring them up in the new Home View and Control Center or just ask Siri to flip any camera at any time. You can even take any camera full screen to give you a great view of what's going on. And we have even more coming to tvOS 14.

Now, let me pass it to Cindy Lin to tell you about it.

Cindy Lin {BIO 21262477 <GO>}

Thanks, Yah. Apple TV is my favorite way to unwind and enjoy entertainment with the family. With 4K, HDR, Dolby Vision and Dolby Atmos, you get a theater-like experience right in your living room, making all your movies and shows look and sound amazing. But Apple TV goes beyond video. You can access the entire Apple music collection and even sing along with timed lyrics. You can play an incredible

selection of games, including all the games in Apple Arcade and we're making gaming on Apple TV even more personal by extending multi-user support.

Now you can instantly resume your games exactly where you left off. Just open control center to switch between users and you can now see your game progress, achievements and friends. And for even more fun, we're adding support for Xbox Elite 2 and Xbox adaptive controllers. Apple TV also helps you keep active at home with a great selection of fitness apps. And with tvOS 14, we're going to make your workouts and everything you do on Apple TV even more productive by extending picture in picture across the entire Apple TV experience. So you can keep up with the news or not miss a second of the big game.

You can even have an AirPlay session show up in a picture in picture window. And AirPlay is getting even better. Now the whole family can share their stunning videos captured on iPhone in their full 4K resolution. With videos, music, games and more, Apple TV truly offer something for everyone. Of course, nothing compares to be encaptured by good story. And we've built a service for just that, Apple TV+. We've already created an incredible lineup of Apple originals and you can watch them all in the Apple TV app, which is available on your favorite Apple devices and all major streaming boxes and many popular smart TVs. It's already reaching over a 1 billion screens and it's coming to Sony and Vizio's smart TVs later this summer.

Today, we're really excited to tell you about a new Apple TV+ original that we're working on. Almost 70 years ago, Isaac Asimov introduced the world to a series of epic novels that span hundreds of world and thousands of years. Many consider it to be the best science fiction series of all time. I would like to share a sneak peek with you now. This is Foundation.

(Video Presentation)

Well, I am super excited to watch Foundation when it comes to Apple TV+ next year. With Apple TV, your home has never been more entertaining. And with adaptive lighting, face recognition for cameras and these other great features your time at home has never been more enjoyable.

Now, let me hand it back to Craig.

Craig Federighi {BIO 6190419 <GO>}

Welcome back. Now, let's talk about some big changes coming to macOS. Since its introduction, macOS has revolutionized the experience of using a computer, by combining incredible power with incredible ease of use. And it's loved by all different types of users from families and students to creative pros, business people and of course software developers. And this year, we're taking the macOS experience you love even further.

But what should we call it. Well, if you're student of macOS, you know this question can only be answered by Apple's legendary crack marketing team. Their drug-fueled mini driven vision quest have yielded some great names and sadly spawned a host of imitators. The truth is, we can't responsibly continue to inadvertently lead our competition to copy of these methods when they clearly can't handle the trip. So this year, we're leaving our process shrouded in mystery and taking you straight to the glorious destination.

Our next release of macOS is macOS Big Sur. macOS Big Sur introduces an entirely new design and major updates to some of the most essential apps on the platform. And just like its name, Big Sur brings you unmatched levels of power and beauty.

Let's start with design, where we're making the biggest change since the introduction of macOS X. To tell you more about the philosophy and incredible craftsmanship behind the new design, here's a short video with Alan Dye.

Alan Dye {BIO 19177610 <GO>}

At Apple design has always been about great ideas. Those ideas, then are developed with this obsessive dedication to detail. If we care enough about all the details and make our products then in the end we will design an experience that really feels like there's no other way to be. And the best example of this is macOS Big Sur.

Our goal was to bring even more clarity to the design of the software, while retaining the mac's powerful capabilities and ease of use. We started with the simplest developments from the shape of the corner radius to refinements in buttons and controls. And we brought our unified language of symbols to the mac making it more consistent and easier to recognize. Depth, shading and translucency are used to create hierarchy. These new materials are rich and they are vibrant. They bridge light and dark. We've reduced the visual complexity to keep the focus on users content.

Buttons and controls appear when you need them and they recede when you don't. There's a new way to access system level controls and a unified space for notifications and widgets. We've also created a new suite of sounds that are familiar to the mac but remastered and more refined. We wanted consistency throughout the ecosystem, so users can move fluidly between their Apple devices. But we also love the mac icon to have a deep history and a distinct look and feel. So we retained many of the highly crafted details and the playful elements that make mac icon's unique.

This OS reflects an important history. It's familiar but it's also entirely new in every detail. We love the mac, is the tool we use to make all the products that we put out into the world and macOS Big Sur is where it starts.

Craig Federighi {BIO 6190419 <GO>}

So that's the thinking behind our new design. Now, let me show it to you in action with a demo.

As Alan said we've refined some of the most iconic elements of the mac experience. Let's start with the dock. It has its elegant new design that floats along the bottom of your desktop. And you'll notice that we've created gorgeous new app icons for all of your favorite apps.

Speaking of apps, let's take a look at the finder. You noticed it has a gorgeous new top to bottom design for the side bar and it has a compact space-efficient toolbar, makes it really easy to get to all of your controls. Next, let's take a look at mail. You can see that mail has all new glyphs [ph] in the sidebar and you may have noticed that we brought color back as well. Now each app uses its own key color and that same colors use the elegant new rounded low selection style here in the message list.

Now the toolbar makes it really easy to get to all your controls. Check out how the search bar expands as I click on it. And of course other operations like filtering, they are just a click away. Next let's take a look at photos. It's just stunning. You can get to all your albums and media types from the sidebar and the photo grid is backed by metal so animations are super smooth, whether I'm scrolling, transitioning or zooming all the way in or all the way out, beautiful.

Now we've refreshed the design for all the apps on the system. From apps like calendar and notes to podcast and music with its new listen now pane. And an new version of iWork that features a simplified toolbar. You may have noticed we've also updated the menu bar. It's now translucent, and elegantly takes on the color of your desktop picture.

And we've updated the layout of menus as well. We've given all the items just a little bit more room to breathe.

Now on the mac we love our ability to get directly at controls like Wi-Fi or sound, and you can see that we've reworked these to be even more useful, but we've gone even further this year by giving you one place to get at all your controls. We've brought Control Center to the mac. All of my controls are here and it's really easy to make adjustments. For instance I can change display brightness here, or I can click to dive in for more, like turning on dark mode or activating night shift. And what's really cool is that I can customize the menu bar with any of these controls.

So say I want one click access to do not disturb. Well I can just click and drag it right into my menu bar and customize just like that. Now we've also reinvented Notification Centre. You can access it by clicking on the time in the upper right and as you see we now have a single view that brings your notifications and widgets together all in one place.

We now group related notifications together. You can easily expand them to take a closer look or clear them all out in one step and we're bringing our redesigned

widgets to the mac. They're really beautiful. And you have all new ways to customize them. I'm just going to click edit widgets down here at the bottom. You can see I have a gallery of all my widget and they come in a variety of sizes. I can select between them just like this and developers can bring their own widgets as well, like this one here from day one.

Now adding widgets is easy. Let's start by adding say the world clock, maybe I'll add notes in, and it will be kind of cool to add my reminders list as well. So that's a look at widgets Notification Centre and our all-new design in Big Sur. Next there are exciting updates for some of the most used apps on the mac. First, let's talk about messages. Messages on the mac is designed to work seamlessly with all of your devices. So your SMS and iMessage conversations are in sync, no matter what device you're using.

Now this year, we're taking messages to the next level with a ton of great new features. We're introducing powerful search to help you find what you're looking for. We have a redesigned photo picker to make sharing photos and videos easier, and Memoji. You can now create and edit your Memoji right on your mac. And Memoji stickers bring personality to messages giving you fun ways to express yourself in all of your conversations. Messages affects, helps you celebrate special moments and get your point across and you're also getting pinned conversations that are synced across devices, so you can always get to them, along with new groups enhancements. So that's what's coming to messages on mac, powerful tools to manage your conversations and new ways to express yourself.

Next app, Maps. Apple Maps is the best way to explore and navigate the world, whether you're planning a trip on the mac or using turn-by-turn directions on your iPhone. Today, I'm excited to announce an all new version of maps for the mac. To start, maps features a stunning new design that makes it easy to find your way around using Apple's detailed new map. And for the first time in the mac, favorites, like home, work and that great coffee shop in the corner are now just a click away.

You can now create your own guides for all the places you want to visit right on your mac. And before leaving for the airport, you can check where your gate is located with indoor maps or explore your destination city with look around which is incredible on the big screen.

We've even brought other useful features to the mac, like the ability to see the progress of friends, who shared their ETA with you. And the mac gets all the other new maps features we just introduced in iOS 14. And that's just a taste of what's coming in the all-new Apple Maps on the mac.

Next, let's talk about Mac Catalyst. Catalyst gives developers, a big head start in creating a mac App from an iPad app. Take for instance our recent release of Swift Playgrounds for Mac Catalyst gave us a big head start creating the App and we were able to spend our development time crafting a great mac experience.

Today, we have some improvements to Mac Catalyst I'd like to share. This year, developers will be able to optimize their apps to fully utilize the native resolution of the mac screen, providing total control of every pixel. We've also given developers new capabilities, including powerful new menu and keyboard APIs and updated controls like check boxes and date pickers. They look great with the new design in macOS.

In fact, we use catalyst with the new version of maps and just as you'd expect, it's a full-fledged mac App that runs natively and is designed in a way that's true to the mac. So you get multiple re-sizable windows, keyboard shortcuts and everything else you'd expect from a native mac App. And we did the same thing for messages. Maps and messages joined the great set of apps from Apple that already use the Mac Catalyst technology. And there is a growing list of third-party catalyst apps available on the mac App Store.

Next, Safari. Our users love Safari for its speedy performance, power efficiency and state of the art privacy protections and it delivers all of that while making it easy to get your bookmarks, tabs and browsing history across all of your devices. This year, we're building on Safari's amazing performance, elegant design and pioneering privacy protections to deliver the biggest update to Safari, since it was first introduced.

As you know, Safari has long been the world's fastest desktop browser. This year, Safari is performance running JavaScript is better than ever and continues to significantly outpace all other major browsers. And now, when it comes to page loading, we're even faster there too. In fact when loading frequently visited websites, Safari is now in average more than 50% faster than Chrome, and Safari delivers this amazing performance while continuing to deliver industry-leading battery life. And of course Safari is continuing to build on its pioneering track record of protecting user privacy.

Safari was the first browser to introduce private browsing, cookie blocking and most recently intelligent tracking prevention. This year, we want to give our users even more visibility into how each site they visit tries to track them and the ways that Safari protects them. So now users can click on the privacy report button in the toolbar when they visit a site to better understand how that site is treating their privacy.

In addition to monitoring unwanted tracking, Safari now also securely monitors your saved passwords to ensure that they haven't been compromised in a data breach. And this is also a big year for extensions in Safari. We're adding support for the web extensions API, so developers can easily bring over extensions that they've built for other browsers. And we're building an all new category in the Mac app store to showcase Safari extensions so users can easily find them. Now extensions are very powerful but can introduce privacy challenges.

In other browsers, extensions can access every page you visit, every tab you open, even everything you type. So we're doing even more here. In Safari, you choose

which sites each extension can work with. And you can even give them access just for the day, just for the website or all the time, but improved performance, power efficiency and privacy protections are only the start. We have a whole slew of new features this year from a customizable start page to redesigned tabs that are more elegant and powerful and native translation capabilities built right in the Safari.

To tell you more, I'll hand it off to Beth Dakin.

Beth Dakin

Thanks, Craig. I'm so excited to give you a tour of the brand new Safari. When you open Safari, right away, you'll notice the new-look. It's clean and fresh. I want to show you one of my favorite new features the customizable start page. I love it, because I can make it my own. It's easy to get to the customization controls here in the bottom corner.

We think a lot of people are going to want to set a background image and there is a beautiful Gallery of curated wallpapers to choose from. You can use one of your own photos too and I know I want a photo of my son. I have a few really cute ones here in the downloads. I can just drag and drop to set it. That is so perfect.

You can add new sections to the start page too. Let's add iCloud tabs and reading list. Let's take a look. There, this is perfect. I use reading lists all the time and now it's so easy to get to. Another way that you can dial in Safari to your specific needs is with extensions. I can't wait for you developers to bring your web extensions to Safari. I've gone ahead and downloaded a few web extensions to take a peek. So let's go here to the Safari preferences to enable them. And I'll enable Power Thesaurus and Recipe Filter. So each of the extensions that I just enabled now has its own button here in the toolbox.

Let me show you Recipe Filter. I love this one. So this extension will search the web page for a recipe and it finds line it will pop up in a little card. It's been a great accelerator for me when I'm building a grocery list. So the extension hasn't done anything yet because I haven't granted permission. So let me click on the toolbar button and I'm going to allow this extension for one day. And when I click here it will do its thing. So here we go. And there it is. So useful. Okay, so I have my personality, pretty thoroughly stamped over Safari at this point. And you know I use Safari for a lot of personal things. And Apple makes sure my private life stays private. Privacy is essential to everything we do at Apple and it's critical on the web. And now you can see what Safari is doing to protect you.

If I click on the intelligent tracking prevention button, I can see the number of known trackers that Safari protected me from on this web page. I can click here to see a list of the known trackers right here in this pop over and the full privacy report is just one click away. And that's what we have for privacy in the new Safari.

Next I'd like to talk about Tabs. If you love tabs, you're going to love the new safari. It's easier and more efficient than ever to work with lots of tabs. So I have another

window here and right away, you'll notice that there are icons and tabs which makes it so easy to spot what you're looking for. And if I open more tabs, then you'll see more of them at once, because the tabs get smaller and uses the space more efficiently. If it's a little hard to find what you're looking for with this many tabs, that's no problem, you can just hover over tabs and see a nice preview of the page.

I'm ready to clean up now and that's easy too. I can just bring up the context menu here and close all tabs to the right just like that. We are so excited that the new Safari has built in translation. Let me show you.

So here on this website on El Mundo Safari has detected that this is not my primary language and it's added the translation icon to the smart search field. I can click here and let's translate this page to English. It will happen in line and as more content is added that gets translated dynamically too. So these are some highlights, but there are so much more to the new Safari.

Back to you, Craig.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Beth. So that's Safari. It's a huge release with new ways to customize, big improvements to your browsing experience like tabs and translation and even stronger privacy protection to keep your browsing, your business. And that's macOS Big Sur, the biggest update to design since the original introduction of macOS X, significant updates to messages and maps and the biggest update to Safari ever. But these changes are only the beginning. For years now down deep below the surface we've been working on something truly profound.

To tell you more, I'll hand it back to Tim.

Tim Cook {BIO 14014370 <GO>}

Thanks, Craig. Big Sur is going to be a great release of macOS. But that's only part of the story, because today is going to be a truly historic day for the mac. Today, we're going to tell you about some really big changes, how we're going to take the mac to a whole new level. From the very beginning, the mac redefined the entire computer industry. The mac has always been about innovation and boldly pushing things forward, embracing big changes to stay at the forefront of personal computing.

The mac has had three major transitions in its history. The move to PowerPC, the transition to macOS X and the move to Intel. And now it's time for a huge leap forward for the mac. Because today is the day we are announcing that the mac is transitioning to our own Apple silicone. When we make bold changes, it's for one simple yet powerful reason. So we can make much better products. When we look ahead, we envision some amazing new products and transitioning to our own custom silicon is what will enable us to bring them to live.

At Apple, integrating hardware and software is fundamental to everything we do. That's what makes our products so great and silicon is at the heart of our hardware. So having a world-class silicon design team is a game changer. To tell you more about Apple's silicon and how it will take mac to the next level, I'd like to send you over to Johny Srouji at one of our labs in an undisclosed location.

(Video Presentation)

Johny Srouji {BIO 19052877 <GO>}

Welcome to our lab. We've been building on refining our Apple silicon for over a decade. The result is a scalable architecture that is custom designed for Apple products and it leads the industry in features and performance per watt. So I'd love to tell you how we got here and what it means for the mac moving forward.

It all started with the iPhone. The iPhone demanded performance and capabilities that were seen as impossible in a device that small. This is why we developed our relentless focus on performance per watt. Generation after generation, we pushed the boundaries of technology which enabled us to improve performance and energy efficiency while building advanced and industry leading features. Our team delivered 10 generations of increasingly complex enriched designs, always improving performance.

In fact CPU performance in the iPhone has improved by over a 100 times, keeping the iPhones performance ahead of every other phone in the industry. Another opportunity for the team was the iPad. While iPhone chips could drive our midstream iPads, we wanted to push the iPad even further. It begun with the iPad's Retina display which demanded a custom chip. So the team's scaled our architecture and designed the most optimized and highest performance chip possible for the iPad, starting with A5X we built a line of SoCs specifically designed for the iPad.

We doubled the iPhone's graphics performance through a larger GPU and a wider memory subsystem. This was the iPad in a class by itself. Compared to the very first iPad, the latest iPad 4 delivers over 1,000 times faster graphics performance in just 10 years. This is part of the reason why the iPad 4 is faster than the vast majority of PC laptops. And this foreshadows how well our architecture will scale into the mac.

Another place where we applied our focus was the Watch. We scaled our SoC architecture to optimize performance for the devices' unique low power requirements. And we built a chip perfectly suited for Apple Watch. All our SoC enable each these products with unique features and end up the leading performance per watt. And it makes each of them best in class. And we do this at an enormous scale.

In fact, adding all of the processors across these three products, we shipped over 2 billion in just 10 years. And we've designed and shipped billions of additional chips, that work together with ours SoCs to enable our amazing products. And now we're

bringing all of that expertise and that same focused and disciplined approach to the mac.

The first thing this will do is give them the mac a whole new level of performance. Now when we talk about performance, we have to talk about power, because all systems built today are constrained by power consumption, performance or both. Among today's consumer systems, desktops deliver the highest performance but consume the most power. Notebooks trade-off performance for lower power making them portable. As you can see normally to get more performance, you have to consume more power.

When you take a closer look at this chart, you realize you want to operate in the upper left corner. You want to deliver the highest performance at the lowest power consumption and that's exactly where we want to take the mac, building upon our years of experience, designing the world's most energy efficient chips, our plan is give the mac a much higher level of performance, while at the same time consuming less power. So much better performance is reason enough to transition to mac to Apple SoCs. But that's just part of the story. Our scalable architecture includes many custom technologies that when integrated with our software will bring even more innovation to the mac.

With our advanced power management, we will maximize performance and battery life better than ever before. Our Secure Enclave will bring best-in-class security and our high performance GPU is going to bring a whole new level of graphics performance to every mac, making them even better for pro applications and really great for games. And combined with other neural [ph] engines, our chips will make the mac an amazing platform for machine learning. And we're bringing many other custom technologies such as our video display and image processing engines that will help make the mac better than ever before.

So what does all of this meant for the mac. First, we're designing a family of SoCs specifically for the mac product line. Second, just like we did with the iPhone, iPad and Watch, we're going to bring great technologies to the mac. This will give the mac a unique set of features and incredible performance. And third, we'll have a common architecture across all of our product lines, making it far easier for developers to run [ph] an optimized software for the entire Apple ecosystem.

Ultimately, we know that bringing our SoCs to the mac will allow us to build much better products. And the mac will take another huge leap forward. Now a key advantage we have is the tight integration of our silicon with our software.

To tell you more about how macOS will earn on Apple SoCs here is my colleague, Craig.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Johny. Now let's talk about the technologies that we built into macOS Big Sur that will make the transition to Apple silicon smooth and seamless for both

consumers and developers. These new mac systems will be incredible and users will want their favorite apps to take full advantage of the capabilities of our custom silicon and the best way to do that is with native apps.

So of course, when we updated our apps for Big Sur, we built everything as native for Apple silicon. And I'm happy to say we have all of our own Apple apps including our most demanding Pro Apps like Final Cut Pro and Logic Pro up and running as native now and they'll be ready for customers on day one. So how do we do this? We're using Xcode just like all our developers will. Everything developers need to build apps for these new chips is built into the new version of Xcode.

To get started developers just open their app projects and re-compile. The vast majority of developers can get their apps up and running in just a matter of days. And to deliver these apps, we've created Universal 2. It's a new type of universal binary that works on both Intel-based macs and macs built on Apple silicon.

So developers can tap into the native power and performance of our new macs and still support Intel-based macs, all with a single binary for all of their users. Some of the biggest mac developers have already gotten started. Microsoft is hard at work on office for the mac. And we've been working with Adobe on their flagship Creative Cloud and many of their apps are already up and running great. So let's take a look at macOS running on Apple silicon. So here we are on the desktop that we know and love. And I'm just going to open up about this mac. And what you see here is that we are running on our Apple development platform. This is a system built to support early development using the same A12Z processor currently shipping in iPad Pro.

Now I have a confession to make. This isn't the first time you've seen macOS running here. In fact, this is the same mac that Beth and I used to demo all the new Big Sur features earlier. And as you saw earlier, we've updated all of our Apple apps and they're running great. Of course, a big part of the mac experience is third party apps and we've been working with our friends at Microsoft and they already have office up and running natively on our new macs.

Let's take a look at word. It runs great. Scrolling is super smooth. Everything you do is just super responsive. Next, let's checkout Excel. Just as you would expect complex sheets and elements like this map all update instantly. And next, let's take a look at PowerPoint. It's using metal [ph] for rendering and it performs great. For instance, checkout how I can see all the layers of my slide in 3D. The animation is perfectly fluid and we've also been working closely with our friends at Adobe to bring Creative Cloud to our new macs.

Here's Lightroom running native on Apple silicon, navigating large libraries of D&G images is super-fast and all of Lightroom's editing controls are available right here. Let's apply an adjustment to this image. Well, that's much better and we can apply that same edit to all of these images in a single step. Looks great.

Next let me show you the App. I know many of you want to see, Photoshop. Here's a 5 gigabyte Photoshop file by photographer Steven Wilkes. Now this is a heavy duty document with lots of layers. Now let's add one more bird in there. Not totally comfortable with the level of social distancing but let's keep going. And let's check out how smooth the animation is as I zoom out. Wow, beautiful. Finally, let's turn to one of our most sophisticated apps, Final Cut Pro. Here it is running on Apple silicon for the first time.

Let's play back some 4K video. As you can see, playback is super smooth and all your filters are here and you can apply them in real time. Let's try some color correction. And I can even add animated titles and lens flare all during live playback and Final Cut takes advantage of the unique capabilities of the Apple neural engine with a new feature that analyzes video and intelligently crop set to keep the most important action the frame. But that's not all. Final Cut fully exploit the system's multi-core architecture to let us play back, not just one or two but three streams of full resolution 4K Pro all on a A12Z processor. Amazing. So that's a first look at Universal apps on Apple silicon.

We're really excited to see so much great work on native apps. These apps even get more amazing when they're built to take advantage of the silicon's powerful capabilities, like incredible CPU and graphics performance, a unified memory architecture and the Neural Engine which accelerates advanced machine learning tasks. The transition to Apple silicon is also great for developers who've already optimize their apps for other Apple platforms. The shared architecture across our products means that there code will absolutely sync on our new macs and there's even more to the story.

We're doing some really important things to make this transition seamless for our users. Now while we expect most developers will go native immediately, we want to make sure that users can run all of their apps on day one, even if some apps haven't yet updated. Now we've been down this road before. When we transition from Power PC to Intel processors a cornerstone of that transition was Rosetta, a technology that makes it possible to run PowerPC apps on Intel-based macs.

MacOS Big Sur will include a new version of Rosetta, Rosetta 2. Rosetta 2 automatically translate your existing Mac apps. So they work on new Macs with Apple silicon. And this time Rosetta is even faster, more powerful and more compatible. It translates the apps when you install them so they can launch immediately instantly responsive and Rosetta 2 can also translate code on the fly when needed. Like for web browsers with just in time JavaScript compilers or for Java code. It even handles the most complex Pro Apps, and their plugins.

Rosetta 2 is transparent to users and the performance is amazing. We're also introducing new virtualization technologies in macOS Big Sur. So for developers who want to run other environments like Linux or tools like DARCO [ph], we have you covered. When you put all of these technologies together, Universal, Rosetta and virtualization, you will have a system that can run an amazing diversity of apps.

To show you how this all comes together, I'll hand it over to Andreas Wendker.

Andreas Wendker

Thanks, Craig. Let's take a look at some existing apps running under Rosetta. Rosetta of course works great with all sorts of apps that use her every day, but for our first demo I'd like to see something a bit more challenging. This is Maya, the powerful animation and modeling software, running great here on Apple silicon. I already have a model open that consists of over 6 million polygons and as you can see I can fluidly move around in the sea. So it's making it more challenging and bring textures and still everything is incredibly fluid.

So, Rosetta works great. And the performance is simply fantastic, but Rosetta isn't just for apps. It also looks amazing very with games. I can even use a game controller. This Shadow of the Tomb Raider, a high end AAA game that's using our metal APIs. I download it directly from the mac App Store, so it's completely unmodified and it is absolutely beautiful.

Let me jump into the water. You see some of the lighting effects here and as I follow the path, you can see the game is responsive and smooth. And the best part is you're running at a 1080P as a translated app and emulation. So these new macs, they are fast. You can see some more of the lighting effects here. It's awesome, what Rosetta can do is existing games.

Now, as Craig mentioned, many of our users rely on apps from other environments. So if you bring up a Linux VM imperatives desktop you can see the graphical user interface designed for Linux here, but of course many developers like to use Linux for hosting service. So let me dive down to the command line and launch an Apache Web server.

And now I can simply bring up Safari and browse the web site of the survey I just launched in the Linux VM. Here it is. Now I want to show you one more type of app to run on these new macs, we haven't even told you about yet. And that is iPhone and iPad apps. Since they've been made to run on the same Apple silicon, that we are using in our new macs they will run natively completely unmodified on the new macs as well.

Let me show you a few. This here is one of my favorite games, Monument Valley 2. It's fun to play here on the new mac. And if I wanted to catch up on my guitar lessons, I can do so splendidly. Well, if I want to relax at the end of the day, a little bit, I can bring up the (inaudible). And that was just a quick look at Rosetta virtualization and support for iPhone and iPad app, giving you just amazing versatility for running apps and other environments this macOS on Apple Silicon. Back to you, Craig.

Craig Federighi {BIO 6190419 <GO>}

Thanks, Andreas. As you saw, macs built with Apple silicon will be able to run iPhone and iPad apps directly. Starting day one, users can download these apps right from

the mac App Store and most apps will just work with no changes from the developer. With everything we're doing, the range of apps that users will be able to run on these new macs is truly unprecedented.

Together, we have all the technologies in place to make this an amazing transition. The vast majority of mac apps can be re-compiled as Universal in a few days. So users can have fast native apps. Rosetta 2 runs existing mac apps, our virtualization technology makes it easier than ever to bring other environments like Linux to the mac. And mac users can for the first time run iOS and iPad OS apps directly tapping into the world's most vital app ecosystem.

Now we know our mac developers will be eager to get started on this new platform. So to get them going right away, we're launching a QuickStart program. The focus of the QuickStart program is to enable developers to make their apps universal and take advantage of all the capabilities of Apple silicon. Developers will have access to documentation and sample code, forums on developer.apple.com, priority support incidents and access to labs around the world.

This program also includes new developer transition kit hardware, so developers can get going even before we ship production systems. The DTK hardware takes the form of a mac mini, but one with an A12Z SoC inside. It has desktop specs, including 16 gigabytes of memory, 512 gig SSD and a complement of mac I/O ports. Most significantly, it will include the macOS Big Sur developer beta and Xcode tools.

Developers will be able to apply to the program at developer.apple.com today. We will be shipping units out starting this week. So you can get to work. So that's how macOS Big Sur is paving the way for a smooth transition to Apple silicon. This year we're elevating the mac to a whole new level and it's an incredible opportunity for developers. I can't wait to see what you all create and I can't wait until we can all be together in person again. And now back to Tim.

Tim Cook {BIO 14014370 <GO>}

Thank you, Craig. And thank you, Johny. It truly is a historic day for the mac. Our vision for the mac has always been about embracing breakthrough innovation and having the courage to make bold changes. Every time, we've done this the mac has come out stronger and more capable. And I have never been more confident about the future of the mac than I am today.

So what's the timeline for this transition? Well, for developers it begins this week with the valuable information delivered at this conference as well as applying for the Quick Start program and for the customers, we expect to ship our first mac with Apple silicon, by the end of this year and we expect the transition to take about two years.

We plan to continue to support and release new versions of macOS for Intel-based macs for years to come. In fact, we have some new Intel-based macs in the pipeline that we're really excited about. What a huge leap forward for the mac and for Apple.

Apple silicon will bring amazing technologies, industry leading performance and a common architecture across all of our products.

What an incredible day of announcements. As you've seen, we haven't stopped innovating. We pushed all of our platforms forward in some amazing new ways. Our OS releases will be available as developer betas today and each of them will have a public beta including watchOS for the very first time starting next. And all of this great software will be available to our customers this fall.

We hope you've enjoyed this very special keynote and that you are ready for the big week ahead, with over 100 engineering-led video sessions, one-on-one consultations with Apple engineers and so much more. We can't wait to start working with all of you. And watch you do the best work of your lives.

At Apple, we've always drawn strength from the diversity of our global community, because we truly believe when we all work together, we can change the world for the better. Thanks to you all for joining us. This has been such a big day and it's only the beginning of a huge week to come. So let's have a great WWDC.

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