

Podcast Transcript – Robust Software Updates, Remote Diagnostics, Data Analytics Key to Premium Connected Vehicle Experiences

[00:00:06] **Matt:** Hello everyone. Welcome back to “The Counterpoint Podcast”. We are back with yet another interesting episode where we will deep dive into over-the-air or OTA update solutions offered by the company Sibros Technologies and how it's helping the connected vehicle ecosystem. I'm your host, Matt Orf, and joining me today is Hemant Sakaria, CEO, and co-founder at Sibros.

Hi Hemant. How are you doing?

[00:00:31] **Hemant:** I'm doing well Matt. Thank you for having me on the show.

[00:00:34] **Matt:** Yeah, great. Great to have you. I'm also joined today by my colleague and research analyst Fahad Siddique from our automotive team. How are you doing Fahad?

[00:00:44] **Fahad:** Hi Matt. I'm very good. Thanks.

[00:00:47] **Matt:** Super. So before we dive into the discussion, maybe Hemant, would you be able to give our listeners a brief introduction to yourself and about Sibros?

[00:00:55] **Hemant:** Absolutely. Yeah. So I grew up in India and I've lived in New Delhi for a long time, and then now I'm based out of Silicon Valley here in the US. I, uh, did my bachelor's and masters at Carnegie Mellon, and uh, then I worked at Oracle and then at Tesla, I was at Tesla for over five years and helped build the software update solution for Tesla and also managed the body and chassis controls, firmware and electronics.

So anything, any kind of software that goes into the seats, the windows and wipers, the lights, the falcon wing doors, the key fob, security to the vehicle, the trunk. So a lot of electrical hardware as well as software. And I was the overall sort of team lead for that, uh, at Tesla for Model X. And since then I've started Sibros. So it's been about five years now, doing Sibros, and it's been incredible journey in that sense. We're focused mainly on providing a connected vehicle platform for all the automakers

out there that can use our tech stack to help make their vehicles better and smarter and safer.

[00:02:18] **Matt:** Great. Thank you for that. Sounds like you've really had some great experience. Excited to dive into how Sibros is helping to solve problems for car makers. So let's go ahead and dive into the discussion. Maybe you can give us a bit of a deeper dive into your knowledge about software and data solutions offered by Sibros and how they help OEMs and fleet owners?

[00:02:40] **Hemant:** So, yeah. At Sibros we provide the three pillars of a software, of a really good connected vehicle platform. So those three pillars are the ability to do software updates every component in the vehicle, get meaningful data from the vehicle and three, do remote commands and diagnostics with the vehicle. And so that is the overall platform that we provide.

And the key here is that a vehicle is a lot more complex than a typical phone or laptop where, you know, we've been getting software updates for decades, right? So it's more about the challenge in a vehicle where you have so many different electrical components and all of them have software on them, they have different hardware, different operating systems, they're provided by different suppliers. There are different ways to interact with them. So there is a lot of complexity in that system, and that is one of the primary things that we help simplify and manage end-to-end, so we can do software update on every component in the vehicle and we can do data collection from every sensor and component in the vehicle, and we can do commands and diagnostics to each component.

So that's the overall platform that we provide, and we've been working with quite a few different large automakers and start-ups as well to provide our solution to them.

[00:04:03] **Matt:** Great. I think that's a really helpful kind of overview. And so does your solution just apply to cars or does it apply to other types of connected vehicles as well? Can it be used for trucks, boats, bikes, other connected vehicles or, yeah. Can you tell us about that?

[00:04:20] **Hemant:** Yeah, it is a really good question. Actually. When we started the company, it was because my co-founder and I both coincidentally, had Subarus, and our Subarus got recalled for software related issues. We had to take it into their dealership.

We had to wait for a couple of hours. We, you know, and then it happened three more times. It happened three times in total. And so that's how we started the company and our goal was to provide reliable software updates to cars over time we found that to provide software updates, we also have to collect meaningful data from the vehicle.

And fortunately, both my co-founder and I had a lot of experience with that as well from our experiences at, uh, Tesla and Fairday Future. And so we expanded from just doing software updates to also. Data collection and then finally to doing remote commands. And then we realized that this is a problem that applies not just to cars, but also to bikes, motorcycles, scooters.

It applies to trucks and buses and tractors and other types of heavy machinery. So it turns out that what we've. Can be deployed on any kind of a complex IoT system, a complex IoT device. You think of vehicle as a complex IoT device where it has a telematics controller that is communicating with the internet and with the cloud.

And then there are, you know, maybe between 50 to 150 different control units underneath that. The same thing kind of applies to tractors and excavators and other machinery. It applies to boats and drones and satellites. So, uh, the possibility of what we can do with our solution is fairly broad. Yeah. But we're still focused mainly on the auto industry, meaning anything that has tires, and moves, people are good.

So two wheelers, trucks, buses, cars and tractors, um, are the main areas of focus right now.

[00:06:27] **Matt:** Great. Thanks for that!

[00:06:19] **Fahad:** Hi, Hemant. Let me just, I just wanted to, uh, talk about Subaru, like you mentioned how you came up with the idea of OTAs, you know, OTAs bringing OTA to the market. So like, when you were working at Tesla, like as far as I'm, I'm aware, I think, um, OTA concept was Tesla was like, uh, they were pioneers in bringing this to the market right?

[00:06:50] **Hemant:** I would say that's not exactly accurate. I think we productionized it more than other automakers. GM had been doing software updates for, I would say probably 10 years or more before Tesla started doing software updates, but. It was very limited and it was not very robust, or at least that is my understanding, and I might be wrong on

that, but Tesla was definitely one of the first that made it more mainstream.

Doing updates that provided a lot of value to the end consumer. That sees new features when they wake up in the morning because their Tesla got updated in the, you know, overnight. And we were able to update every component in the vehicle. Everything from even the latches on the doors. They have software, I mean, seat belts have software and there's so much.

That has so many things in the vehicle that have software that people just don't know about. And we were updating all of those components and improving functionality or addressing bugs in the system. So in that sense, I think we made it more mainstream. And then every other automakers started, you know, copying or imitating Tesla or wants to have a solution as strong as Tesla's solution. But we weren't the first by, by any means.

[00:08:12] **Fahad:** Okay. Right. So in terms of your clientele, who are some of the major car makers that you're working with right now?

[00:08:16] **Hemant:** So we've got some, uh, big customers spanning Asia, Europe, and the US. And with every large automaker there is a little bit of a sensitivity on when they want to announce that they're working with Sibros because it is also a bigger part of their transformation. And so they want to make it part of their overall transformation story, which means sometimes that we cannot talk publicly about some of our customers. But I'll give you a hint and a sense of some of these companies.

So Mahindra & Mahindra out of India, one of the largest EV manufacturers in India and one of overall largest automakers in India is a customer of ours and they've planned to deploy us on every electric vehicle that they have over the next seven to eight years. Bajaj is the third largest bike manufacturer in the world, manufacturing three and a half million motorcycles and bikes every year, but they are a big customer of ours for last couple of years now, we have a luxury passenger car manufacturer that is based out of the UK. As a customer we have. Some electric bus and trucking companies. We have some uh, uh, Volta trucks is one of our customers, correct? Sono Motors out Germany and Lightyear out of Netherlands and ego out of Germany. We've got some other companies in the US that we can't name. And yeah, so I mean, we've got a pretty wide variety of vehicles.

We have Lyft as a customer on their electric bicycles and electric scooters in the US so we've got a fair breadth of companies that we work with.

[00:10:00] **Fahad:** So like, just touching on that point. So do you work with competent makers as well?

[00:10:05] **Hemant:** So we work with chip manufacturers to integrate our software directly on the latest and greatest chip sets that they're providing so that, uh, when our customers request us to support their new programs or new vehicle models that are using those chips, we are already ahead of the game.

We're head of competition, and we're already pre-integrated on the latest and greatest hardware. So we work with NXP. We also work with other chip manufacturers like St Micro, Cypress and, uh, Renesas and a few others. And then we also work with suppliers of TCUs and TCU hardware. So that other strategic move for us, we've got some big partnerships there with Marelli, with Actinal, with pre-call, and they kind of service different market segments and different geographies.

So we're, we're excited to be working. You know the top TCU s as well.

[00:11:01] **Fahad:** Right, right. So I think Marelli is a, like a big player in Europe. So I, I guess your geography in terms of a collaboration with Marelli would fall under Europe primarily.

[00:11:10] **Hemant:** I think Marelli is more of, yeah, definitely they have a presence in Europe, but they're also quite global. They have a strong presence in, in Europe and in Asia and in the US. So they're kind of a global player and they. The largest of the automakers out there, and so. Uh, working with them has been incredible because, uh, they're already supplying the hardware to a lot of these big automakers and we're becoming integrated with their hardware so that all of those big automakers can leverage our system, uh, right out of the box.

[00:11:47] **Fahad:** So just extending on that. So if, so, like, I've, I, I work in the connected current, the TCU the department. So like, as far as I'm aware, Marelli has, you know, has an ongoing contract with Stellantis. So, so they, you know, they ship their TCUs to Stellantis across worldwide, basically. So if tier one's involved. I'm basically trying to understand the, your business model.

So obviously you provide a connected vehicle solution platform basically, and I was going through your products as well. You know, the data log, the deep connected platform. And so, and what the tier one two is basically they provide the T-box, right? And the T-box has all the functionality in terms of collecting the data from the car and sending it to the cloud. So if Sibros wasn't involved, like, you know, isn't it possible for traditional OEMs to, work with the tier ones to manage all the software?

[00:12:38] **Hemant:** Yeah, theoretically that is possible and just to clarify, we put our firmware on the telematics controller that Marelli provides. So Marelli has their own software that does other functionality, and we provide the functionality for doing software updates, data collection, and remote diagnostics on their TCUs.

One of the, the reasons why an automaker is moving away from having this sort of hardware and software coming from the same supplier is that typically the hardware providers are more, are, they're much better at building hardware than they are at building software. And if the automaker chooses to work with two different TCU suppliers, they want to be able to leverage the same software stack in the same Cloud.

For managing the data from their entire fleet. Uh, now, today, if you say, okay, Bosch and Continental have to collaborate together with Bosch's software on Continental hardware, or, you know, choose any other two large, uh, suppliers out there. That's a very big problem, not just from politics and pricing and, and all of that, but also just the integration between two very large suppliers is very difficult.

So that is why the OEMs would rather have hardware that they can source separately from software. And our business model is that we work directly with the automaker. So even if the deal. Is going through with one of our partners. They have a direct relationship with the automaker and so do we. So there are some cases where there will be an exception and we become a tier two supplier to the hardware provider, but it is very rare, mainly because we do a lot of work directly with the automaker.

There's a lot of integration. So it's, it's really hard for us to not have any interface with the automaker. So we, we work closely with them directly.

[00:14:44] **Fahad:** Okay. Okay. Got it. Yeah, Thanks.

[00:14:47] **Matt:** Slightly different direction. So one of the biggest challenges from a lot of, for a lot of car makers is when there are issues and vehicles need to be recalled due to these software issues.

I think you've touched on this a little bit, but could you talk a bit more about how Sibros can be of help?

[00:15:03] **Hemant:** Yeah, absolutely. I mean, we don't take our phones into the Apple store to get a update, right? And they don't, you know, the equivalent would be that someone gets a mail, you know, a paper mail that says, Hey, your phone is, has a software issue.

Please take it into your nearest Apple store, please schedule a one-hour appointment. And then they go in there and someone picks apart your phone and like connects wires into it and does a software update. Then patches everything back up tests if your phone works and hands it back to you. So that sounds absolutely absurd, but that is what happens on a car today.

We get paper mail. We go, we have to schedule an appointment. They, they take apart some of the upholstery and connect to either the, you know, onboard diagnostic port or directly to an ECU that's not connected, uh, through the OBD port. Then they do a software. Then they have to put everything back together.

They have to revalidate that everything works and then give it back to the customer. So this is a very inefficient process and it needs to stop completely. All of this needs to happen over the air. All of it needs to happen overnight when the car is in your garage or out-parked on the streets. And of the approximately 27 million recalls that happened in the US in the last 12 months, a third of them were for software.

And a third of that third, so you know, was because Tesla had some software issues, but Tesla was only one that fixed those issues by sending an update over the air. The remaining two-thirds of that, which is like 6 million software recalls happened and they people had to take their vehicles in to get it resolved, and a lot of people may not have even taken it in yet, which means that they're driving an inherently unsafe car for them, for their families, and for everyone else that's on the road next to them.

So I think this is a very big problem and one that can cause even bigger issues down the line because cars are starting to have more and more software controls in them. Uh, so it is important to fix this over the air.

[00:17:21] **Matt:** Got it. Yeah. Seems like that helps with timeliness and, and efficiency as well. Another question, so you all recently announced a new partnership with Google Cloud.

I was wondering if you could tell us a bit more about that partnership and how it's gonna enable connected vehicle management, but also the role of the cloud and the edge in working together with that.

[00:17:40] **Hemant:** Yeah, we are really excited and thrilled to be working with Google and working with Android as well. So we're working with both Google Cloud and Android, and we're developing some very key unique functionality and features in collaboration with Google, leveraging their hardware and software solutions. And so overall it's been a great partnership. We've had lots of joint customer wins where we are deploying it on Google Cloud.

And their, their team's been phenomenal to work with. We've been partnering with them for over two years now, and we think the world of their team and Google's capabilities are unmatched, comes to technology in the software industry.

[00:18:26] **Fahad:** So at, uh, CES 2023, this, which happened in January, this Qualcomm showcased, its, uh, Snapdragon Ride Flex SoC. One of the interesting things demoed there was how automaker can enable feature upgrades over OTA, like buying offline maps data for a particular city, or enabling ADAS feature for a limited period, or even buying insurance. So how does Sibros solution fit in there?

[00:18:52] **Hemant:** Through the use of our Deep Commander, which is the remote diagnostics and command management system, we can deliver certain functionality and features or enable functionality and features over the air, and the automaker can automatically approve those requests and charge the consumer directly for new features that they buy.

So that's one of the mechanisms in which this can happen. The deep logger that we provide for data collection can be used to make sure that. You know, the consumer is utilizing the functionality properly and to see if they're utilizing it at all. Right? And, and if they're not, then how do

they, you know, provide certain guidance or formation to lead to better consumer adoption?

Because some of the features in the future might be on a subscription basis, and so if they don't see good utilization of the feature, the automaker might want to prompt the user to try the feature out or educate them on it because otherwise they have a risk of losing out. On the subscription dollars that come from the end consumer, uh, buying that feature.

So there are different ways that we can leverage the Deep Logger and the Deep Commander to, you know, provide new features and to enable features. The software and update system with the Deep Updater would allow new functionality and features to be delivered to the vehicles so that, you know, new capabilities can be added to the end consumer.

[00:20:57] **Fahad:** Yeah, makes sense. Yeah. My next question is, uh, basically around connected and autonomous features like ADAS fit into the ecosystem with Sibros. So, like Counterpoint's estimates, like if you look at eight years from now, so like in 2030 we're estimating about like, you know, the overall connector car penetration globally is gonna be about 90, more than 95%, basically. And currently it's, you know, about 50%. In that eight year timeline, you know, about, say it's 70 million new cars, connected cars will be on road. So that actually presents a huge, you know, market opportunity for Sibros as well. So, yeah. So my question is basically how connected and autonomous features like ADAS fit into the ecosystem with Sibros?

[00:21:07] **Hemant:** Yeah, so I mean, ADAS is just one more, you can think of it as just one more data source. For our platform, so whether it's files or videos or audio clips or it's data from the internal sort of can networks and ethernet networks within the vehicle. It's just another mechanism for us to collect event driven data, do edge filtering and processing, and, and bring that up to the cloud.

A lot of the automakers today do not have the capability to slice and dice this data to bring up just the actionable bits, they end up uploading anywhere between 50 to 100 gigabytes of data per month, per vehicle. You know, and, and this is of course more applicable for engineering fleets than, you know, customer fleets.

In customer fleets, 50 gigabytes would be prohibitively expensive, you know, because of the cost of cellular and the cost of data storage and

processing in the cloud. And so in production fleets, we actually don't see large OEMs leveraging their, you know, autonomous vehicle data because they don't have a good way of just Filtering out and, and getting the actionable pieces of information. So that's one of the things that we help provide because everything we do is based on events that happen in the vehicle, and those events can be customized and dynamically pushed down to a vehicle or a fleet. So you could say, If the vehicle speed is more than 60 kilometres an hour, and the front radar detects that there is a vehicle that is less than 10 meters away from our vehicle.

Then record a five-second video clip of that and record. I don't know, other pieces of information from the canvas, like what is the seatbelt are, is everyone wearing seatbelts? How many passengers in the vehicle? And share that small slice of information up to the cloud. Now, one thing I will say in this example is that user consent, privacy, and user data is extremely sensitive topic and something that we take very seriously at Sibros. So we provide all the tools to the automaker, but it is up to them to make sure that they're complied with local rules and policies. Our system as a whole is compliant with GDPR and with, you know, different standards in different parts of the world for safety and security and data privacy. But I think to answer your question, , anything that is ADAS related also fits right into our ecosystem because it's just another way of getting data from vehicle.

[00:23:50] **Fahad:** Yeah. Yeah. Got it.

[00:23:54] **Matt:** So, I know you've just touched on this a little bit, but yeah. Could you tell us a bit more about what you all are doing in regards to data security, especially with these connected vehicles? You know, data security is very important and how, how are you all ensuring safe rollouts and secure OTA updates?

[00:24:12] **Hemant:** Yeah, this is something we take very seriously and both safety and security. Two of our key tenets here at Sibros we've put a lot of emphasis on designing with security in mind from day zero, how we performed routine sort of penetration testing and we've integrated different security tools into our software development lifecycle. And we're also compliant with some very strict standards out there like WP 29, Tsec, SOC2, ISO 21434, octane, and others. So beyond being compliant with standards, I think operational security is what we care about.

So how do we make sure that the system is actually safe and secure. And we've gone through quite a bit of internal work to test our systems and we continue to do that to provide peace of mind to our customers. And this is a big deal for us, right? We don't wanna be like Zoom, where they're a big company and then they had some very serious security breaches, right?

So we don't want that to happen because our reputation and people's lives depends on a safe and secure connected vehicle platform. Given the kind of functionality we provide, which has both safety and security implications, we take our overall development in these areas very, very, uh, seriously.

[00:25:55] **Matt:** Well, I think those are some really interesting pointers Hemant. And also thank you Fahad for taking time outta your day and making this discussion more interactive. It was great talking with you both. Thank you so much for joining us, Hemant, and we gained a lot of knowledge about how software updates are one of the crucial elements of the connected vehicle Ecosystem.

[00:25:53] **Hemant:** Bye, Matt, thanks for having us on the show.

[00:25:54] **Fahad:** Yeah, thanks Hemant, Thanks Matthew, for the discussion. Thanks!

[00:25:57] **Matt:** For our listeners. We are available on major podcasting platforms such as Spotify, Apple Podcasts, and Google Podcasts and more where you can listen to our previous episodes. For now, it's Matt signing off and see you in the next one. Bye.