Jaco - **00:03**

Hello and welcome to the Human and Machine podcast. My name is Joko Malcott. I'm your co host here with, of course with Lenny Smith. Lenny, good to be back in the studio recording another episode after a couple of really crazy weeks training and just a bit of madness.

Lenny - **00:18**

Yeah, no, glad to be back. We had our first ignition core training here in our offices at our element eight offices. Great to have people back, seeing people in their faces, having that human interaction once again quite strange. And it was quite strange, to be honest. I must say, my COVID protocol is a bit lacking.

Jaco - **00:37**

You did observe good responsible behavior, but.

Lenny - **00:42**

Definitely good to have just a little bit of human interaction again.

Jaco - **00:45**

Yeah, it definitely seems like there's a craving for that. I think it was on inc.com or Forbes. I can't remember. I read an article over the weekend where they speak about people feeling today they were experiencing fomo, which is the fear of meeting up. And that's definitely probably something that will be coined now and become quite prevalent. But we definitely have heard and seen that. But yeah, there's definitely a bit of a hunger for just to get a bit of humane to action and really good hosting our first ignition core training course as well in South Africa. So this week, of course, maybe just before we kick off with this week, the Human and Machine podcast, if this is your first time listening, it is of course hosted by us here from element eight in four ways in Johannesburg.

Jaco - **01:25**

And we really aim to help you make sense of the latest industrial technology and the challenges and opportunities impacting manufacturing today, especially on the back of the COVID pandemic. And we're really grateful. Chief Selenia if I look at a few of the past episodes, we're really grateful to have hosted some just extraordinary people and leaders in the automation world globally since we started this podcast. Very humbly. Today is no exception. And we look forward to speaking with Travis Cox, who is the co director of sales engineering at inductive automation. Travis started with inductive automation in 2003 and has previously served as director of training and director of support at Inductive Automation. And Travis has overseen numerous successful launches of HMI and SCADA projects across various diverse industries. So really looking forward to the chat with Travis from inductive automation.

Jaco - **02:21**

And one of the key things that we hear about inductive automation is just the incredible growth that the company and the technology has seen over the last few years, which is easy to understand really, given the scalar and IIoT platforms, crucial requirements of affordability, ease to deploy and run in, flexibility and it definitely does tick those boxes. So really forward to chatting with Travis. Travis, good morning and welcome to the podcast. Great to chat with you.

Travis - **02:54**

Yeah, thank you for having me. Really happy to be here.

Jaco - **02:57**

Perfect.

Lenny - **02:58**

Travis, now, I think when we had a discussion with you said that there's one liner that we can introduce you with, and that was thanks to bowling.

Jaco - **03:05**

You just kick it off thanks to bowling.

Lenny - **03:07**

I'm just kicking it off straight with that. You can maybe elaborate. So for people in South Africa, it's.

Jaco - **03:13**

Not cryptic at all.

Lenny - **03:15**

Bowling in the States is not what you see here at the magic company. It's a really big profession there. It's really taken serious. And Travis, I think you could thank your career pretty much on bowling. Is that right?

Travis - **03:31**

Absolutely. Yeah. It's kind of a funny story. So I grew up bowling, I've been bowling since I was a little one, eight years old, and have really taken bowling seriously. I was in junior programs and I was a regional pro for quite some time. But yeah, I owe my career and a lot of the relationships I have due to bowling. In fact, our company, if you know the history there, we started, Steve Heckman, who is the owner of the integration know, wanted to build his own software, and he really reached out to some folks he knows, say, hey, do you know any developers, any programmers? And that's how kind of things got started. And so Nathan Boger was one of the early ones. I was working with Steve, and he knew Colby clague at UC Davis, at a university.

Travis - **04:26**

And I grew up with Colby. And we actually met in junior bowling programs. And so in Brentwood, California, it was really quite fun. We've been bowling together for a very long time and went to college together. We bowled in college as well on the team. You know, since we know each other for a long time, when kind of inductive automation got started, Colby brought know myself, brought know, Carl brought in quite a few folks and that's sort of how we started. I mean, really, it was this core people, set of people from University of California, Davis that came in and started helping Steve build his dream software. And that's kind of what got this company really going. So it was really, I guess all because of bowling.

Lenny - **05:10**

Crazy. If you guys haven't listened to our podcast with Colby, please make sure to download that. We talked a little bit with Colby around just the ethos and the pillars that the inductive automation brand really has been built on. So sure, please make sure to also listen to that podcast as well. But Travis, with you, I think we're going to dive a little bit more deeper into the tech side of things, and we really want to talk a little bit about perspective, the new visualization module that you guys have from inductive automation, and really just understand what this great opportunity there is for our system integrator and for our end clients by utilizing the perspective module. Now, obviously, the perspective module is the new visualization module that's available for inductive.

Lenny - **05:59**

But yeah, maybe if you can just give us a little bit of history and feedback on where it all started moving from vision, which is the more traditional kind of scada application, to perspective.

Travis - **06:10**

Yeah, absolutely. I mean, let's kind of go back to the beginning. When we started prior to 2010 with inductive automation, we had two different products. We had a product called Factory SQL, and it was written in net, and that was one that Colby originally built here at inductive automation. And it basically took data from OPC and put it into SQL databases. So it had these transaction groups that we know today in the SQL bridge module. And it was really crucial to get that data into a database that we can then visualize. And so that was the first product after we had that, we had to have some visualization. And that's really what Carl Gould, what he really focused on. And he was a Java expert. He built factory PMI, which was plant management interface, and it was the front end.

Travis - **06:59**

And that was all based on Java swing technology. So it was a desktop application, which factory PMI is now the vision module for ignition. And so vvision has kind of been with us since the very beginning. Again, built on Java swing technology was really easy to get a client out there. You didn't have to have anything installed. You just simply go to our web page, you click the link to launch the designer or the runtime, and it will download and run that as an application on the machine. So of course you had to have a machine like a Windows or Linux Os that could run Java so that we can actually open up the vision client. But it was a great visualization tool, and we've had that over 16 years. And we've really made a lot of improvements to that product over the years.

Travis - **07:46**

And it's been really tried and true in terms of what people use it for visualization. But if you look at what's kind of happening from a technology standpoint, everything's moving to the web world. Everything we do, from all the business applications that we use, from G suite to office 365 and more, they've all transitioned to being pure web to use your browser, just simply go access the applications and you can go to your phone, you can access the applications in your phone, you get the same experience and it's all connected and it makes it really easy to interface with these systems. And for us, vision was a really great product, but in terms of being able to get that data out to more people, ignition's licensing model has always been unlimited. So it's always been really easy for people to go.

Travis - **08:36**

You install ignition on a server, you go anywhere in your plant or anywhere in your network, and you can simply put in your browser the IP address of the server and you can launch the vision client. But you had to launch it, you had to download and run that, it had to be on a machine that could support it. So for example, if you had a mobile device like a phone or a tablet, and you wanted to launch vision, we couldn't do it natively. So we came out with this thing called mobile module, and that was basically a way to launch the vision client virtually on the server. And we can pipe it through as an image to the phone or to the tablet. And that worked really great, but it wasn't a true mobile experience.

Travis - **09:14**

And as the technology shifted and everybody's moving to the web world, we knew we had to get there as well. And we had to take advantage of this latest and greatest technology so that we can get data to more people. And that is really what, two years ago, when we started development of perspective, that's really what sprang us, bringing this new technology into the platform. And we not only wanted to be able to provide data to more people, but we wanted to create something that just wasn't done before. A first class product built from the ground up, where nobody had to know anything about HTML or CSS or JavaScript or any of that stuff.

Travis - **09:53**

You just go in designer, very drag and drop build your application just like you did with vision, but be able to deliver that in a browser in a pure web way. And it is really a remarkable product and it is really going to change the game because there's so many opportunities and things you can do with perspective, not just the fact you can get data to more people, it's very simple, you just need a browser. But the fact that we can also leverage phones and tablets and have them be a core part of our application. And if you look today, all businesses are more mobility. The pandemic has also shown that people have to work from home, work remotely, and they want to stay connected in this ever changing world.

Travis - **10:39**

And you need to use the technology that facilitates that allows us to stay connected, and that's really what perspective is all about. And so we are so excited to have this product in the market and so excited to continue expanding onto it. I just want to say, too, that we will continue to have both of our visualization platforms in ignition. We have our vision. A lot of people still have vision applications, and we have perspective. With ignition being a platform, it's modular. You can have all these modules coexist and work together, and you can take advantage of all that they have to offer there. But with perspective, there's just so much more possibility that people can take advantage of that and use that. And so we're really excited to see what's coming with that.

Lenny - **11:27**

Yeah, I think you've hit it nail on the head there, Travis, by mobility and the concept of bringing your own device to your place of work to view applications, that's a concept that's been around for quite a while. And I think a lot of ScaDA vendors out there thought, you know what? If we can just take our current ScaDA visualization, render that application as HTML, or being accessible through a browser, then we've done it. We've accomplished web design and web responsiveness. But it's more than that. It's not just about the actual graphic component of it. It's the way that you interact with that application. You guys went so far as you built perspective from the ground up, so you didn't leverage any other technology that you had. You pretty much built it from scratch.

Lenny - **12:19**

And that obviously allowed for interaction with your device, with your phone's peripherals, as an example, natively, which is something that was very difficult to do if you just rendered the visualization component that's on the existing module into a browser. So I can use the phone's gps location, I can use the phone's barcode, I can use any of those peripherals, the accelerometer, as an example, on the phone. And the application possibilities that brings to the device and to the application is immensely. And it actually now enables you to bring your own device to work, to actually do the task that you're required to do.

Travis - **12:57**

Yeah, it's a really good point that you bring up there. When we looked at building perspective, we could have easily just said, okay, let's take vision and try to just visualize that as HTML, right? Try to bring it to a browser. But you're adapting one technology to another, and you're making a lot of compromises. You would just be showing the data in a browser. And we didn't want to just render data as HTML. We wanted to create a first class web application framework, one that you can build any kind of application. Yeah, it happens to be rendered in a browser as HTML, but that you literally can customize and build the application you need. And you can control everything. Not the navigation experience. You can control what people are seeing and the security around what they're seeing.

Travis - **13:47**

You can allow them to have user input, or you could build forms. You can have the interaction with the application much like you would be used to in a desktop application. But we're doing it truly in the web world. And that is what's really unique about perspective. It's not just a rendering system, it is a complete application framework to be able to build these kind of things, and it just opens up the door with all the possibilities that are out there. And we'll probably talk about a lot of these opportunities, but we can certainly do HMI SCaDa and we can do control, but we can build database front end applications.

Travis - **14:24**

We have a lot of customers who are exploring that building inventory systems, or they're converting access or excel sheets and doing it with perspective, because then they can get a broader audience to get access to that data very easily. In a nice application, they might build crms or point of sale systems, or really, the sky is a limit for what is possible with this, and nobody shoehorned into one way of doing it. And I think that's pretty unique and pretty exciting in terms of what people can do with perspective.

Lenny - **14:58**

I think a key thing there is getting data and applications to as many people as possible. And surely now with the pandemic, a lot of factory and a lot of personnel were told to work from home. And what a great opportunity it was for actually leveraging this technology to bring all of this data right there to the guy in his home. He's got a view of his entire plant. He can interact with it and literally perform the functions that he would have performed normally, but just in the comfort from his home or from his big screen tv with the app, and just open up a browser, getting the session and all that data is available to him.

Travis - **15:34**

Yeah, it's kind of interesting how timing happens, right? And that we had this product out prior to the pandemic really taken form here. We have a lot of customers who have vision, and the applications sit on the OT side of the networks and they do bring some of it to the business. And it is largely responsible to kind of make sure that they open what's necessary secure everything and provide that access. But when you look at perspective, when the pandemic hit and people wanted to see data remotely, it was really an easy choice for a lot of customers to say, okay, we're going to put a server in place that has perspective end.

Travis - **16:15**

We're going to be able to get access to the data that we have on the OT side, build out the application, and whether it was on premise or the cloud, and they brought to the cloud, it could be even more accessible. But the point is that it knows how to secure this, they know how to work with it, and they can leverage their existing corporate identity structures. And it was much easier decision for them to say, yeah, you know what, let's give people access to more of this data and allow that to happen at home, either through a VPN connection or whatever other mechanism. And so perspective has really allowed a lot of companies to stay connected during these times to get that data to more people, which is critical.

Travis - **16:53**

If they can stay connected, that can really help with troubleshooting issues, they can do it remotely, or they can have, a lot of companies can have a skeleton crew that's going into the office or into the plant, and then they can have the rest of the people actually be able to work from home. And so we've seen a lot of people to be able to put this in parallel and take advantage of it. And it really accelerated, if you will, their digital transformation initiatives where they wanted to do this. And so before, they might have been just kind of waiting. Well, we're not quite ready to kind of get these technologies in place, but now it's like they can see the benefits that it brings to the table and the benefits of getting data to people.

Travis - **17:36**

So I really think that timing was kind of perfect for all this to have perspective here.

Jaco - **17:41**

Yeah, definitely. It definitely has enabled a lot of organizations and teams within those organizations over the last couple of months. I want to quickly ask you about security. It's a topic that does come up. There's a couple of assumptions that's made as soon as you put anything in a web browser and open it up, so to speak, that there's always a security concern or a security discussion that needs to be had. And I suppose as we've seen over the last little while, as these cyber threats against industrial control systems specifically increase, security obviously becomes a more urgent priority. I know that you guys at the folks inductive automation have always worked hard to improve security and sort of bring true it features into the domain of OT now to keep your system safe. I know that.

Jaco - **18:34**

I think it's you actually, personally, you often advocate not only having the right features as far as security is concerned, but also having the right mindset in terms of how you approach that and some of the kind of preparations that you can do before implementing a solution, any sort of explanation, or maybe you can elaborate a little bit in terms of the correct approach. Outside of the security features, which I think most people are assuming are in place and that should be there, what are some of the approach that you can talk to in terms of how to build that art securely?

Travis - **19:10**

Yeah, that's a topic we can spend a lot of time on. Security, for sure. As a company, inductive automation is very focused on security. I mean, the threats that are out there. Ignition is used in critical infrastructure. It has to be as secure as possible. And we have to do our due diligence to not only ensure that the product has a lot of security features, but that the product that's going out the door is also secure and is not going out with any issues since they're being put into these environments. So for us, security is just really extremely important part of the business, and we've always taken security very seriously.

Travis - **19:49**

But today we've got a division who's cybersecurity division who's focused purely on this, and we have a cybersecurity risk officer who is an expert in the field, who is going to conferences and staying up to date with all the latest vulnerabilities and issues that are out there to ensuring that not only our software is secure, but that our business is secure as well. From that standpoint, it is a mindset. Security is a mindset. You've got to take it seriously. It's a culture that everybody has to embrace. And at our company, everybody is contributing to having a secure product. And you're always as weak as your weakest link. Right. Everybody has to have that.

Travis - **20:32**

I mean, we put all of our employees through security training, where they watch videos and they take small tests and to just make sure we're doing our due diligence on that, right? Because if one little email, somebody gets on their computer and they download an attachment, could wreak havoc in a particular network. Right now, we have a lot of measures in place in our network to ensure that there's security within our network, too. But again, cybersecurity is just a really important mindset for us, and that just kind of extends everything to the product itself and perspective when we're architecting it. We built it from the ground up with cybersecurity in mind. And that, I think, is really critical.

Travis - **21:15**

We've had a lot of years experience with vision, and we had to do a lot of things with vision over the years to continue making it more secure and more secure. And we have third party security consultants who do pen testing on the product. We've learned a lot with that development there that we can bring into perspective. So when we started building it from scratch, we're able to kind of keep these core security concepts in mind. And so I think that's one really important piece. And so one thing to note, if you look at perspective, when you start up a client, a session, we call it in the browser and you log in. Essentially, we create that session on the server. And that server, we know everything that client is going to be getting access to.

Travis - **22:01**

And all the critical data tags and databases and information behind the scenes is basically on the server. There's a huge firewall in front of it. So when you have a client open and you have to establish a session, and we can talk about how we establish a session, but when you establish that session, we know who that person is and we know what security levels that person has, and we can guarantee that they can't get access to that critical data if they don't have the right privileges, essentially. And so it's really all about being able to verify that user, be able to verify and have trust that we know who's accessing the system. And that comes down to how you approach the authorization or the identity management. And you look at ScADA historically, you have a lot of HMI Scadas out there.

Travis - **22:45**

We have a panel pc on the line and the username passwords on a sticky note right next to the monitor.

Lenny - **22:51**

Or you can guess it. Or you can guess it, depending on the.

Travis - **22:53**

Or you can guess it. Yeah, operator. Operator, yeah, exactly. Or they use these shared username passwords. And the reason that they did that was because they didn't want operators to have to go through a lot of hoops to be able to get access to the data, right, to be able to go and get into the application. And we can understand that they have to run the operations. They can't be spending a lot of time trying to remember this crazy long password they're putting in and all of that. And so it's important that when we do it to perspective that we can ensure that we have proper identity management, we can make sure that people are getting and we can trust who they are and not have these simple passwords in there and not have these shared passwords or that's.

Travis - **23:34**

Luckily we have this entire world. There's so much development happening in the web world, right? All of these major tech companies, Google and Amazon and Facebook and all these have, because people are accessing their system, they have to ensure security. They've been building up all these tools and frameworks that we take advantage of. One of those frameworks is called identity providers IDP. It's a corporate identity system. And a lot of you on this listening will have this. Maybe you have Okta or duo or adfs, or if you log in something with your Google account or log in something with your Facebook account. That's called federated identity and it uses protocols like OpenID, connect and Sam'l. But what it allows is when you go access the prospective application, you're going to be redirected to a login on this identity system.

Travis - **24:22**

You're going to validate who you are, you'll be redirected back. And of course once we know who that person is, we can bring that session to them, we can show them the data. But often these systems will have two factor authentication. They'll have that second form to really verify users identity. So that could be sending a text message, a push notification to their phone, it could be an app where they have a rotating token or key that they have to put in to verify that form. But what's important about these identity systems is they're all built to be simple. It's meant to have security, but meant to be simple. And so the whole idea of being able to have single sign on, you log in once, it'll remember you for a certain amount of time on your computer.

Travis - **25:03**

So you do that process once and you can log into all your applications, you don't have to worry about it. And the fact that it's easy to put your credentials in and to know that everybody's got their own credentials, it's a real critical part of it cybersecurity strategy is to have this and we can leverage that same technology and perspective. And along with that, we're in the web, we're in the browser, and we can use HTTPs and have certificates where people, when you go to your bank and you log in or go to some other website, you log in, you look for that green check or the lock that it is secure. Well, we're luckily using the same technology, we're not inventing any of that, so we could take advantage of that same thing.

Travis - **25:45**

So a prospective application is as secure as any other web application out there. And with the identity systems, we can go so much further to be able to have to know and trust that people are getting in. Furthermore, we can then lock things down even more based on who that person is, what roles they have, where they're located, if they're at home, or if they're on premise, if they're remote. We can lock things, any part of the application based on those roles or zones, and we call that security levels.

Travis - **26:15**

So there's so much that we, not only as a company, as a culture that we're doing to ensure security, and that's a mindset that we all share, but there's a lot that we're doing in the product too, and leveraging these tried and true standards that are out there today and bringing it into, if you will, the OT world and into the software here. And it really allows people to have this access and not have to really think and not have to worry about all these potential attacks and vulnerabilities are there. Now, companies still have to be diligent. That's why it is there. But it's pretty cool to see all the security features that come with this product.

Lenny - **26:54**

Yeah, it's quite crazy. I think there was a survey at one point where they asked a whole bunch of people, you know, what would you actually take someone else's laptop and access your Internet banking from someone else's laptop via the browser? Or will you be willing to give your phone or device to another person and use your app, your mobile app that you've downloaded to the guy to log in? Obviously, people were very suspect to allow to give their mobile devices, but with the browser, they were all kind of, yeah, sure, you can allow my browser to access your credentials. I think the point here is that you guys also have a mobile app. We spoke a little bit about it when we talked about utilizing your devices features like gps and camera, et cetera.

Lenny - **27:39**

But from a security perspective, again, you've guys got the mobile app and the same security levels apply there. It doesn't matter if you're going through the browser or the prospective app.

Travis - **27:49**

Yeah, right. There's three different ways that you can launch a prospective application. One is just simply in the browser, and with the browser, right, you just are just going to a URL like you're with any other application. Like you're saying, there are a lot of people, it's so used, it's so trusted that there's no questions about it. The other way that we can access prospective application is through the mobile apps. And we have native iOS android apps. And these apps are really, they have an embedded browser, they're just a wrapper around the browser. And a lot of applications are done this way. But the reason to have an application on the phone is so that we can get access to those phone sensors.

Travis - **28:31**

You can't get access to gps or to the camera or to any other part of the phone without all the phones have security as well, right? You have to allow an app to have access to it. So by having the app, the user can grant access to these things and leverage those features. There's so many exciting ways that we can leverage phones. Using the gps for geolocation or geofencing. We can switch the screen to a different screen based on where the person is located. So if they go out on site, we can automatically get to the relevant data for where they are. We could tag their location when they're entering data. So many cool, exciting cases for the gps along with the camera as well.

Travis - **29:11**

We're seeing people who are putting barcodes on machines and scanning barcodes from the app and able to leverage that to get more context, to get to an area of the application or to even use it as a part of the application, like for inventory control. So leveraging the GPS or camera accelerometer, or NFC or Bluetooth, low energy, all these things that we can get access to can allow that application to be much more powerful. And we can do that because of the phone. And the third way that we can launch a perspective app is something we're coming out with in 8.1. I know you guys will want to talk a little more about 8.1, but we're coming out with perspective workstation, which is a desktop application for Windows and for Linux as well, that will basically have the embedded browser. Same experience.

Travis - **30:01**

And the reason for that is if you look at a lot of plant floor at hmis, you have a dedicated station for the HMI. And a lot of companies are really resistant. While they might be okay with on their personal laptop, having them access the browser, having a browser on the plant floor on a panel pc where they can get out of the application, go and do other things is typically frowned upon, right? So the desktop workstation is one where we can have the prospective app in a kiosk mode where it's full screen, you can't get out of it. And so it doesn't look like a browser, it looks like an application, even though it is fundamentally a browser behind the scenes. And we can support multi monitors.

Travis - **30:41**

Well, much better if it's one shortcut, opens up the application and have four monitors, everything can be opened from one shortcut, and you can have data on all those monitors very easily. And so workstation is going to be really important for that kind of traditional HMI experience that you're looking. And that's going to come with ignition 8.1. So we're really excited about that. But there's also sensors and things that can be connected to a panel pc on the line. It could be maybe a serial device that's connected. They're scanning something with, or maybe RFID, or maybe there's a file that they want to automatically look for on the system and parse in for quality control. There's all sorts of cool things that are there. And again, having a browser, you don't just get access to that from the browser for security reasons.

Travis - **31:24**

But if you have the workstation, we can get access, right? And we can leverage that, just like we're leveraging the sensors on the phone. So these three ways of being able to get access to the data allow, of course, perspective to be accessed anywhere, no matter on any medium. You can literally get it anywhere. I mean, heck, my refrigerator has a touch screen on it, and it has a modern browser, and I can access my home automation system on there. That's ignition perspective. It's pretty incredible the amount of devices out there that have browsers. So not only can we get that data everywhere, but we can leverage these things for what they truly are and bring in more data that we can do that securely. Right. We're following all the standard paradigms for those.

Jaco - **32:06**

Yeah, I wanted to. You mentioned 8.1. I think at the time of recording, it's the 14 September, today, Monday. We are really on the eve of the ICC. And for those listeners that are not aware, the ICC is of course, the Ignition community conference, which will not be held as a physical event this year. That's obviously due to the worldwide outbreak of Covid-19 but instead, this year will be a virtual event. I think at the time that you'll probably listen to this podcast again. I think probably the ICC would have passed a couple of days. Some of the highlights maybe around 8.1. Where do folks get more information? I'm assuming that the ICC site will be updated. Anything to look forward to? Any specific top three have to visits post ICC?

Travis - **32:55**

Yeah, so I mean, ignition 8.1, we're really excited about this. So if you look at ignition eight, that's where we introduced perspective, and that was about a little over almost a year and a half ago when that was released. And there's been a lot of exciting advancements with especially perspective over that last year and a half. But 8.0, if you guys look at our versioning, all of the even number versions for us are kind of big shiny new features. We introduced some new things, right? So perspective was one of the big shiny new features that were there. And we are always iterating and listening to customers and making it better and better. That's what we've been doing. But then the OD number releases. So 8.1, these are LTS releases.

Travis - **33:37**

These really mark a critical point that says, look, this is now stable, this is mature. We have had a lot of use of that product out there. People who want to stay on the cutting edge of technology and now it's a place where anybody who has earlier versions and they want to use this technology in a production setting, if they've had established systems, this is the time to do it. Now, of course, if there's new projects, typically people are okay with new projects and taking advantage of the latest and greatest technology. But 8.1 is really about that stability, about the maturity, especially with perspective. So having an LTS version is probably one of the most important parts of this release. But with perspective, we are really trying to round out the features, really provide a lot of things that customers have been asking for.

Travis - **34:23**

And as I mentioned, workstation is one of those features. To have it to really truly say, yeah, perspective is prime time for HMI, especially on the plant floor. It's kind of always been that way, but now it's really solidified that you can use it in that purpose because you have that desktop application. So that's one of the big features that are coming with 8.1. The other thing that I'll mention actually a couple of other features of perspective in particular that are going to be there. We're introducing some new components. These are some powerful charting and smart symbol components in 8.1. They're going to make it easier to build hmis and easier to query and analyze historical data. And envision.

Travis - **35:05**

We've had this thing called Easychart, which is a very popular charting component and we basically are bringing that to perspective, but making a lot better. Right. We can always improve upon what we've done before. And so there's a lot of rounded out components and features that are coming in perspective people could take advantage of with this and we're always going to continue iterating perspective, adding more. But there's some good milestones in 8.1 along that. The other big thing is again staying true, that security mindset. We introduced the federated identity providers with perspective only because it was a web application. It was really easy to bring that in there. But people want to be able to use the idps across the board with ignition.

Travis - **35:48**

They want to use it with log into the gateway, log into the designer, log into vision, as well as to log into perspective. Everything in 8.1 will support the IDP paradigm and that's going to be really exciting because now it, especially if that's what they want to use, it's no longer active directory in LDAP that they want to use for their corporate identity system now. And across the board having that there, it just checks that box, it says, okay, you know what, we're good, let's move on. And they can focus on the application at the end of the day. So those are some big highlights that are there. I think one of the exciting parts for me as developer too is that we're going to be releasing our official docker hub image and so we could easily install run ignition in Docker.

Travis - **36:33**

And people are using this not only for kind of remote orchestration or auto deployments, but especially for benchmarking or for development and testing. They can spin up ignition really quickly with Docker and do a lot of things, and having an official image from us will help facilitate that. So there's a lot of cool things that are coming with 8.1, but again, it's really that mark of stability. We're going to see a lot more use of these technologies and I'm really excited to see what our customers, what everybody out there in the community will do with this.

Lenny - **37:05**

Perfect. Thanks, Travis. I think personally for me, I actually had a support case just last week about Docker support, so that's great, having those Docker images available, and I can see why 8.1 is going to be a long term support. I think everything that's needed to be there to really say it can be used on a plant floor from a SCaDA perspective when we talk SCADA applications, especially with the identity providers as well from securing not only perspective but your application and the designer as well. Definitely see why it's an LTS or a long term support release of ignition. Definitely. I quickly want to chat about something that's quite keen to my heart. It's something that came up quite a lot in numerous podcasts that were doing, and you actually had a webinar about it.

Lenny - **37:54**

I think you called it the six easy steps to digital transformation. And we talk a little bit about it during the, when we spoke about the pandemic and how to get data to everybody. And for me personally, I love that podcast because I think, or that webinar, because I think a lot of people hear the world, digital transformation and they think it comes with a checkbook. You must have a checkbook with a lot of zeros to be able to afford and to get it going. And I really love what you've done there. Just to show the guys, just get it going, just do something and you can really get digital transformation quickly off the ground. And it doesn't have to be a massive project.

Lenny - **38:32**

It can be a very simple thing, but just get it going and just leverage the technology to make that as simple as possible.

Travis - **38:41**

Yeah, that's like the big myth, right? That digital transformation, we hear always a lot of hype about it and a lot of companies who are putting their strategies together and all of that, and they're really kind of looking at it holistically. It's got to be this huge checkbook to get this moving and to get going with it. But it's really not the reality. I mean, when you look at it, we talked a lot up here about perspective, and perspective changes the way we can get data to people, and that is incredibly important, right? We have an easy medium to get data to people. And if we can have a model where we can develop, add new features to that and deploy that quickly to people, and they just get access. That is a critical part of digital transformation for sure.

Travis - **39:24**

But the other critical part is that we come from the OT world. We know how complex that world is. And you hear of a lot of, in these digital transformation initiatives, you hear a lot of this it applications out there, especially cloud platforms like AWS and Azure. All these amazing things you can do with data machine learning, analytics and bring in to do deep learning and bring into data lakes and all these amazing things that are possible. And that is there. It certainly is possible, but they draw a single line down to the OT or to the plant forward and say, we're just going to get access to all this data. And we know there's an elephant in the room right when they do that. Because the world of OT is super complex.

Travis - **40:04**

A lot of legacy plcs with not a lot of security in them, a lot of domain knowledge has to be known. A lot of mapping of data. You have to know the addresses to map it to proper data models. You have to know what the units are and what the engineering units are and limits are. All these things have to be known. And so a traditional ScaDA system is one where you have a server and you connect directly to all the plcs there in the plant floor, and you may have 5000 of those plcs. You're bringing data up and you're able to of course, bring data to people, but that's not scalable because if the it wants to bring data up to those levels, they have to turn Scado into middleware. That's not what it's designed for.

Travis - **40:49**

And not going to want to try to connect to plcs as well, because there's a lot of security risk by opening up plcs to the business side or even worse to the Internet. Nobody will ever do that. We have to kind of minimize the risks that are there. If, you know, the stuxnet virus things, nobody wants that right in their systems. So transforming the way we architect the OT systems is paramount. And we've got to stop connecting devices to applications and instead connect devices to infrastructure and do it securely. And so we talk about this a lot. And that six easy steps that I was going through was basically saying, look, it's quite easy to take advantage of edge products that are out there.

Travis - **41:30**

And we have ignition edge that can easily connect to plcs very inexpensively, legacy plcs, polling protocols, and convert that to a secure MQTT and bring it to a pub sub model, send it to a middleware that's truly middleware that we can, then it's infrastructure that then other applications can't subscribe to. And that will truly open that data up and it provides more scalability. Because then if I want to go get a brand new sensor or device, that there's tons of them out there. If you look at IoT world, there's a lot of companies that are making these new amazing sensors and they speak MQTT natively and they're plug and play. You bring into your network, you plug it in, it has all this amazing data, it's already got context and just comes into our infrastructure.

Travis - **42:13**

And so if we can really transform architecture, we can take the old and the new and commingle them perfectly, but do it in a way that's using open standards, leveraging secure open standards that get data out. And we're seeing, it's really easy to put an edge product out there and even send data to the cloud. And people are putting data to the cloud and then having perspective up there to visualize it, having it available anywhere. And we could do all that securely and it will bless that whole system and we can do that really cost effectively.

Travis - **42:42**

I mean, there's people who are putting, especially when the pandemic hit, I mean, they're able to kind of do complete digital transformation, if you will, and getting data from tons of plcs and talking about a couple of few thousand dollars to get the hardware and the software to get the data up and to do things with it along with these new sensors that are also cost effective. So there's just on both sides of we can, if we can leverage data, get data up into a proper infrastructure, and we can leverage something like perspective to get data to more people and we can do all of this securely. Well, that's digital transformation to me. And it's not this crazy hard thing. It's not something that's in the distant future. It is here, it's now.

Travis - **43:19**

And we want to help people with that journey and show them that there's a lot of value you can get along the way by putting things in parallel with what you've got. You're going to get value, you're going to get wins, you're going to be able to propel more of your initiatives, and ultimately, yeah, you will transform your architecture, but you're not going to do it overnight. That's just crazy to kind of think about. It's that sole graduation, slowly graduating to getting to the new architecture. That is where people are going to get that win. And that's really what that webinar is all about, is to show people these easy steps they can take towards this journey.

Jaco - **43:53**

And probably one of the most practical ones that I've watched over the last. And in fact, thinking about it now, we should probably include a link to that as part of the podcast as well. And I love that approach, and I think, I love the simplicity of what that message actually is. Travis, I think very often when we think about, and if we had to think about it, the most critical challenges, like facing a lot of manufacturing companies through their value chain, are actually data challenges and data problems. And I think supply chain, procurement, quality control, all of those sort of elements of value chain demands forecasting based on accurate and available data. And that's really what it's about.

Jaco - **44:30**

And I love the fact that we can easily and cheaply without having massive DX budgets, seemingly have massive DX budgets, expose that data quite easily and securely, of course.

Travis - **44:42**

Yeah. And it is all about leveraging open standards. I mean, we have always been harping on this.

Lenny - **44:47**

You read my mind.

Jaco - **44:48**

I was going to ask about that.

Lenny - **44:51**

That's critical.

Travis - **44:52**

That's how we came apart. That's how we came know. Steve, when he was looking for software, he wanted to find off the shelf software. He didn't want to build his own software, of course. I mean, that's crazy, right? Integration company, they want to focus on delivering solutions to their customers.

Jaco - **45:05**

But he couldn't find anything in his founders mode. I think he mentions he didn't wake up one morning thinking, hey, I want to create a ScaDA product or a ScadA company.

Travis - **45:12**

Yeah, no way. He wanted to leverage more it standards. He wanted to be able to get data to more people and be able to build bigger solutions and not have everything behind these firewalls or proprietary nature or financial burdens or barriers that happen to exist out there. And so our whole mindset from the very beginning is to keep the data open to leverage standards, especially it standards, but of course, be able to have a solution that really works well for OT. And it's that blend of OT and it, I think that's really made our company successful. And you look at today, it's so apparent today that this OT it mindset and that leveraging these standards, open standards are here because we wouldn't be able to do digital transformation without these. Right.

Travis - **45:59**

We say the Internet of people, which is all the cool web applications you have out there, and it was all possible because of HTML over HTTP, right. There was open standards. Nobody had to ask for permission to innovate. They just leveraged these open standards. Well, look at what's going to happen if we leverage that, especially for the OT data, like with MQTT, and how we can bring data up and we leverage these standards. We have these platforms that are there. They don't have to have permission. They're going to go and use these tools, use best in class, put them together and innovate. And that's where customers are going to win at the end of the day. So I think it's so incredibly important to have these open standards because the customer is not locked into one way of doing it.

Travis - **46:44**

They can use everything that's out there that is truly following these kind of standards and they can really get to where they want to go. So I just can't stress that enough. We talk about this so much, but ignition's dna is to really keep things interoperable, open and secure.

Jaco - **47:03**

Yeah. And that's extremely powerful and valuable, especially with less reliance on experts to make that we, I think we're actually overtime a little bit, Travis, it's the eve of the ICC. You're probably running around and making sure a lot of things are in place behind the scenes to deliver an incredible ICC. I think by the time this podcast will go live that would have happened already. So we can probably share a few updates. I know Lenny is burning to ask you one more question. Get a couple more minutes of your time.

Lenny - **47:37**

Just one thing. I think it's all about just the immediate return on value that you can get from implementing these products. I think a lot of people think perspective or they think a SCaDA solution that you have to use it for a SCADA solution. But Travis, you've got a very good use case just by doing. And it sounds simple, right? It was about just monitoring reservoir levels for a water customer that you guys have and just being able to use open standard.

Lenny - **48:09**

There was a few legacy systems, but using MQTT, the broker centric approach, giving visibility to something as simple as a water reservoir level and just the amount of saving things from a maintenance perspective and from a travel perspective for the guys don't have to go and drive out to the field every time to see what the levels are before they have to do their maintenance tasks. That for me.