

# Beyond Compliance: Digital Product Passports as Strategic Advantage with SAP's Oleksandra Ostapenko

**Oleksandra:** [00:00:00] I think that digital product passports will ultimately push a company towards a new level of supply chain transparency and collaboration than ever before. And as we all already discussed, they will open up new business models, but also beyond circularity. Think about resell, recycle, remanufacturing all of these strategies could become available if digital product passport is seen as an opportunity and not as a compliance burden only. I think the only way to see the impact of digital product passport is to look beyond compliance.

**Sin:** Welcome to a new episode of The Future Supply Chain, a podcast where we discuss hot topics, best practices, and the latest innovations in today's global supply chain. My name is Sin To, and today we will discuss one of the most disruptive [00:01:00] regulatory shifts we've ever seen in years. It's the Europeans digital battery Passport Mandate and how it'll reshape global supply chains from mining and cell manufacturing, all the way to recycling and second life. Now to introduce the guest joining us for this important discussion. I'll hand over to my wonderful co-host, Zoriana.

**Zoriana:** Hello everyone. I'm Zoriana Zahorodnia and I am product marketer in supply chain here at SAP. Super excited for the discussion today because we're joined by our amazing colleague and expert Oleksandra Ostapenko. Oleksandra, welcome to the podcast. Would you mind sharing a little bit about yourself and your role at SAP with our listeners?

**Oleksandra:** Yes. Hello everyone and thank you very much for the opportunity to be here. Today, I'm Oleksandra Ostapenko, I'm Head of Product Management for industry standards and regulations in supply chain management. It means that my team [00:02:00] looks after different industry standards and regulatory requirements that might become relevant for our products. And then if we believe that they're relevant for our products and especially for our customers, then we implement them as a part of our standard portfolio.

**Zoriana:** Welcome, Oleksandra. So let's start with the definition. So what is the digital battery passport and why is the digital passport such a game changer for global supply chains beyond just ticking a compliance box for the EU battery regulations?

**Oleksandra:** So digital battery passport is part of European Union agenda to foster the circle economy. You could think about it as a unified digital thread that has all of your supply chain data end-to-end. Most of the product's impact [00:03:00] is decided before it's even made. From materials and energy use. So recyclability design stage decisions, they shape both the environmental footprint and manufacturing costs. And that's the reason why European Commission has introduced the Ecodesign for Sustainable Products regulations, or ESPR regulations. And this is a major policy shift from being, let's say a linear economy or towards the circular economy and this regulation, it enforced since 2024 and they're gradually moving to cover different product types, also beyond batteries.

**Sin:** So for listeners who may be a little bit familiar with the new EU battery regulation, but not with all the details. What are the key digital battery [00:04:00] passport requirements coming into force by 2027 that companies need to consider, and which battery categories are in scope?

**Oleksandra:** Yeah, so if we look at digital battery passport, it's a part of a larger ESPR regulations. It's a part of a larger digital product passport family. What it has in common with all digital product passwords would be of course the core principles of it.

The first one is interoperability, so all digital battery passwords must be interoperable. Another principle is the introduction of three key actors. It would be the economic operator. Then it would be authorities and then public who would need to get access to digital battery passport.

Also, we talk here about the public portal, meaning that the [00:05:00] end users and consumers should be able to scan a battery passport with a QR code in order to get access to the free product information, and again, this product information covers the entire product lifecycle.

Another interesting point of battery passport as it actually starts with the very design of the product and it goes all the way down to the asset management and end of life. Meaning that here we talk really about the entire product lifecycle along the value chain and also for digital battery password, we talk about static and dynamic data.

**Sin:** And can you also share based on this regulatory, who will then actually be held responsible as the economic operator for [00:06:00] maintaining the passport data over the battery's lifetime?

**Oleksandra:** So the economic operator will be responsible for publishing the digital battery passport but if you look at all the data attributes that must be collected. We talk about a lot of collaboration here. There are about 80 different data attributes that span across different processes going multi-tier. Ultimately, economic operator is responsible for publishing the battery passport.

At the same time, economic operator would need to work with their suppliers to get this information in the EU compliant and strategized format. And also suppliers would need to be able to provide this information towards the economic operator and if they're able to do it, this also gives them a competitive advantage.

And also, we should think about how the battery passport [00:07:00] changes its journey because it all starts with putting a product into the market, but as the key principle of ESPR regulations is to enforce circular economy, we should not forget that the life of the product doesn't stop, once it's placed into the market, it actually continuous, and it goes beyond.

And that's why here we could think about handover process. So, changing the responsibility and moving the responsibility from the original economic operator to the next economic operator who now owns this digital battery passport because again, digital battery passport would have a lot of dynamic data and a lot of usage data.

That's why what happens with this product after it has been put into the market is as important as its actual [00:08:00] creation process.

**Sin:** So it will also enhance the transparency about the product and, where it has been produced, where it goes to and where it may be ends when it reach its end of lifetime.

**Oleksandra:** Yes.

**Sin:** So, as we're all working at SAP, I would like to know as SAP has been very vocal about not just helping customers comply, but also using the digital battery passport as a backbone for value creation. So, can you walk us a little bit through what the SAP digital battery Passport actually is and how it fits into SAP's broader sustainability and supply chain portfolio?

**Oleksandra:** Absolutely. And your spot on here. We definitely want to go beyond compliance because using digital battery passport as a compliance only, it's really a missed opportunity if done right, DPP or digital battery passport is

far [00:09:00] more than just a compliance requirement because it could become a strategic advantage for companies. And if it's implemented correctly, DPP can actually transform supply chain transparency but if it's reduced to paperwork only, it just creates another compliance burden.

So, the way how we approach it is we build our digital battery passport solution on top of SAP Business Network Asset Collaboration because the Digital Product Passport, if you think about it, it's the collaboration. That's the core principle of digital product passport is how to exchange data, how to get reliable data from your end-tier suppliers, and how to share it in a secure way with your end users. That's why our business network is a natural [00:10:00] choice as a multi passport platform, which will support not only battery passport, but also another types of digital product passports.

Also, we will have an integration with SAP IPD to make sure that design data gets actually integrated and incorporated into our digital battery passport. And also we work with our sustainability portfolio, for example, with SAP AFSM to make sure that we have the carbon footprint calculation done here as well.

**Sin:** A follow up question on this how do we connect product structure, carbon footprint data, and also traceability information into one consistent, let me say like this, digital history of the battery.

**Oleksandra:** You are spot on here. That's in fact a digital history of the battery and at the [00:11:00] same time, this is a digital living document of the battery if you wish. And in SAP Business Network asset collaboration and in general in a larger business network family. All of this data could be combined, the maturity, stability, the design data and sustainability data, as well as usage data. All of this comes together in one platform, and then as the economic operator, you can decide what kind of data you want to share with whom.

**Zoriana:** I have another question. Most OEMs and some manufacturers that we talk to, they don't struggle with the idea of a battery passport. They struggle with data. What are the biggest data and interoperability challenges in real projects? And how is SAP addressing topics like data spaces, Catena X, and cross company data sharing?[00:12:00]

**Oleksandra:** That's a great question. Think about any product today behind it as a web of designers, suppliers, manufacturers, logistic providers and service teams. Each of them playing a vital role, but they are joined success depends on one critical factor. It's how effectively they calibrate and work together through

the data. And data, as you said, data that's accurate, trustworthy, and instantly usable, right?

In today's connected economy, and especially with our shift over circle economy enforced by ESPR regulations, success actually depends on not just what your company can do, but also how well it work with the partners and whether you can trust your data and exchange it seamlessly.

This kind of collaboration doesn't happen by chance. It requires shared [00:13:00] standards, and that's basically our answer because collaboration is as strong as the foundation it stands on. And one of the examples would be as asset administration shell or any other industry standards that we incorporate into our product because standards, they ensure consistent structure and semantics of the data. And SAP Business Network provides the platform to share and act on this data at scale. Ultimately standard is a backbone of interpretability across the global supply chains.

And another point that a lot of our customers raise when we are talking about data they talk about data sharing, right? We talked a lot about calibration and why it is important, but obviously collaboration implies data sharing. And our solution supports selective and secure data sharing down to the [00:14:00] attribute list. I already mentioned that a digital battery Passport has about 80 different data attributes, and here you can decide what kind of data attribute you want to share with whom and when.

As an economic operator and ultimately as a supplier, you are always in control what you share and interoperability in general is of course one of the core principles of ESPR and one of the core principles of any digital product passport, especially in this multi role systems. And of course, when we talk about these three actors, we should not forget that when we say economic operator, we also mean supplier.

Especially we have learned that they could change roles very fast. And in our case, we also support this multiple scenarios in [00:15:00] our platform. A supplier could be a supplier and at the same time it could be an economic operator for some other types of the product because here we really want to support multiple scenarios and at the same time ensure interoperability.

**Sin:** Hey, one, follow up question on this because you mentioned the Business Network so often, and when I think about the EU regulation, I mean it's covered for the whole European Union, but then each country has got its specific regulation. Is it also combined into this digital battery?

And then you can share it within your business networks based on the digital battery passport that you still comply with each country's regulation or how does it work?

**Oleksandra:** That's a great question. I always say comply locally, trade globally which [00:16:00] means that we do support ESPR, which is the EU regulations. But one thing that we need to understand about ESPR is even when we say EU, it has a global impact. Of course, this regulation was initiated in European Union, but it implies, and it affects all trading partners who want to sell any products into the EU market.

You should see digital product passport or digital battery passport as a pre-requisite to be able to enter European market. That's why the impact of these regulations, it's very global. Also, we're looking at similar emergent regulations at other countries. I can see that there are similar discussions happening in India, also in other countries in APJ and [00:17:00] also in the Americas.

And with our product, our intention is to support different types of product passport related regulations, including emerging passports that have not been even defined yet but our technology should allow this compliance regardless of the country or region.

**Zoriana:** Okay, that makes a lot of sense. But I have another follow up question regarding the security, because you just mentioned that in the process there's so many parties involved. So how do you strike the balance actually between transparency of the data and protection of sensitive IP across very fragmented value chain?

**Oleksandra:** That's another great question and of course you should think about our business network being on the market for many years. [00:18:00] Digital product passport is just one of the capabilities that we are introducing on top of our mature and very secure product that has been certified with all ISO certifications out there.

And again, our core principle here is to enable data sharing by the principles of economic operator decides who could see what, and the data sharing here happens actually on the data attribute level. It's not about just sharing a product passport itself, it's actually sharing of some of the attributes of this product passport.

And another key attribute of, or core principle of GPP is a public portal. We will enable end users and consumers of digital product passport to scan the QR

code and then access the publicly available information without [00:19:00] any registration, and of course, free of charge. And at the same time, the sensitive data remains in our system and it remains secure.

**Zoriana:** Okay, that sounds good. So once companies have high quality battery passport data in place, where do you see the biggest opportunities for creating business value? Could you share a couple use cases beyond reporting, for example, around new service models, second life batteries, or more resilient sourcing strategies?

**Oleksandra:** Yeah, so you can think about it like better data infrastructure will enable stronger oversight, right? If designed right, if designed properly, DPP becomes an infrastructure and not just compliance. It can enable circularity, transparency and the new business models you have [00:20:00] asked for. Of course the real opportunity, it goes beyond just get scanning the QR code and that's, for example, how the data flows downstream.

For battery specifically, the passport carries the state of health data. It carries the carbon footprint per lifecycle phase. It also has the recycled content percentage. This information that's genuinely valuable for second life triage and recycling decisions, it's so not just the compliance check boxes. And you now have transparency into your actual lifecycle data rather than some declared averages. And the quality of your passport data will directly affect your cost based, so that's one of the examples I could imagine.

And of course, all of [00:21:00] this data could then be sent back to the . To incorporate this usage data into your design process, meaning that design for circularity. Engineers will design batches and products for the use, for repair and recycling from the start, because the passports, they go downstream and they make this downstream value visible and economically recoverable.

Also imagine that the digital battery passport could enable larger second life markets because usage history is here and product health is also there. Or optimized reverse logistics engineering, right? Because passports, they make returns economically viable.

**Sin:** That will open up new business models if I understand it correctly. So, if we take a look at the [00:22:00] let's say , journey until 2027, it's not just one year, it's just a couple of months ahead. So if I'm now a global battery or automotive player listening to this, and I want to truly be ready for 2027, so what does a realistic transformation journey look like in, in your eyes over the next 12 to 18 months? And where should companies start? And what are the

typical pitfalls if they start with this project because they need to be ready by 2027.

**Oleksandra:** Yes, so you are right. The implementation deadline for batteries , for industrial batteries was a capacity over two kilowatt. They are affected by battery regulations, and they're the first product category that needs to comply with these regulations. So the implementation deadline is February, 2027. It means that the companies they [00:23:00] need to act now.

The maturity, stability, and getting reliable data and mapping this data across supplier tiers. This alone can take several months that slide, the time to start is today. Another point I want to make is when we talk about batteries, we should not forget that these regulations, it's not explicitly for automotive only. It covers additional industries. It also covers utilities. It covers energy, it covers heavy machinery. So that's also something to keep in mind that battery regulation doesn't mean automotive only, and it focuses on all industrial batteries with the capacity beyond two kilowatt.

**Sin:** If we now talk a little bit beyond batteries as kind of blueprint for digital product passports. The battery passport is often described as the first [00:24:00] real world implementation of the broader Digital Product Passport concept under the EU Eco Design for sustainable products regulation. So in your opinion, how are you designing the SAP solution that it can be reused as a blueprint for also other product categories and industries that can also use this kind of Digital Product Passport?

**Oleksandra:** That's a very good question and thank you for asking because ultimately we are building a multi passport platform, which will support different types of digital product passport. If you look at batteries or if you look at any other type of digital product passport, they have a lot of in common, for example, the web portal, the interoperability concept, the concept of data as sharing and involving public and involving authorities. All of this will be there and is [00:25:00] there for digital battery passport.

Another topic is, if you look at what kind of product categories are affected by ESPR Eco Design for sustainable product calculations, that would be textile, metal and steel. That would be aluminum, also tires. And this list will grow this working plan that EU commission has communicated. It only covers several product categories, but this working plan will be adjusted and enhanced in a couple of years. So ultimately, most of the products traded in the EU will be affected by this regulations, and our intention here is to support customers across different industries.

And that's why we are also active members of different working groups that define these standards and that define these regulations and we are working closely with EU commission to make sure [00:26:00] that we first of all are informed about these changes in emerging product passports, but also that we can speak on behalf of our customers and represent our customers as customer voice to try to co-develop the specific implementation and delegated acts for certain product passports.

**Sin:** Is there an opportunity to see this digital battery passport in some way?

**Oleksandra:** Yes, it is. Come and see us and join us at Hannover Messe. Join us at HMI we are at booth 15, and we will be presenting the live demo of our digital battery passport. And also we will talk a lot about the concepts of interoperability that we have, and we'll talk about industry standards that we're using to make sure that this interoperability concept is [00:27:00] given.

**Sin:** Perfect. Yeah. We will put this information into the show notes too. That's great.

**Zoriana:** Yeah, that's cool. But let's talk AI, because we are the Future of Supply Chain podcast and there is no future without AI anymore. Oleksandra, where do you see the most promising roles for AI in the context of digital battery passport? Whether that's automating data collection, anomaly detection in the value chain or any kind of closed loop design and planning. So where do you see the biggest value of it?

**Oleksandra:** Zoriana, you have named all of them already of course there are more use cases we could think about, but the use cases that you have just mentioned these are the use cases we're looking at as well. And of course, as you said, [00:28:00] there is no future without AI and Agent AI and we are incorporating AI into our digital product passport and battery passport solutions for sure.

**Sin:** Great. We are almost at the end of our podcast, very sadly. But we are asking this question to all our guests, so let's end this also with a crystal ball question. Oleksandra, when you look ahead to 2030, or beyond how will the battery passports and digital product passports more broadly have changed the way supply chains are designed, operated, and governed?

**Oleksandra:** I think that digital product passports will ultimately push a company towards a new level of supply chain transparency and collaboration

than ever before. And as we all already discussed, they will [00:29:00] open up new business models, but also beyond circularity, right?

Just to give you a couple of examples, think about our strategy, right? Think about resell, recycle, remanufacturing all of these strategies could become available if digital product passport is seen as an opportunity and not as a compliance burden only.

I think the only way to see the impact of digital product passport is to look beyond compliance.

**Sin:** Great, very interesting. I look forward to it. Thanks a lot, Oleksandra , for this great conversation, and thank you all for listening. Please mark us as a favorite and you can get regular updates and information about future episodes. But until next time, from Oleksandra, Zoriana and I thank you for discussing the Future Supply [00:30:00] Chain.