

**SIX**

Sustainable  
Industry X

MOBILE  
WORK  
MACHINES



SITRA

MoRE  
DATA

Teollisuus vahvistaa  
kilpailukykyään ja vihreää  
siirtymää digitaalisten  
tuotepassien avulla

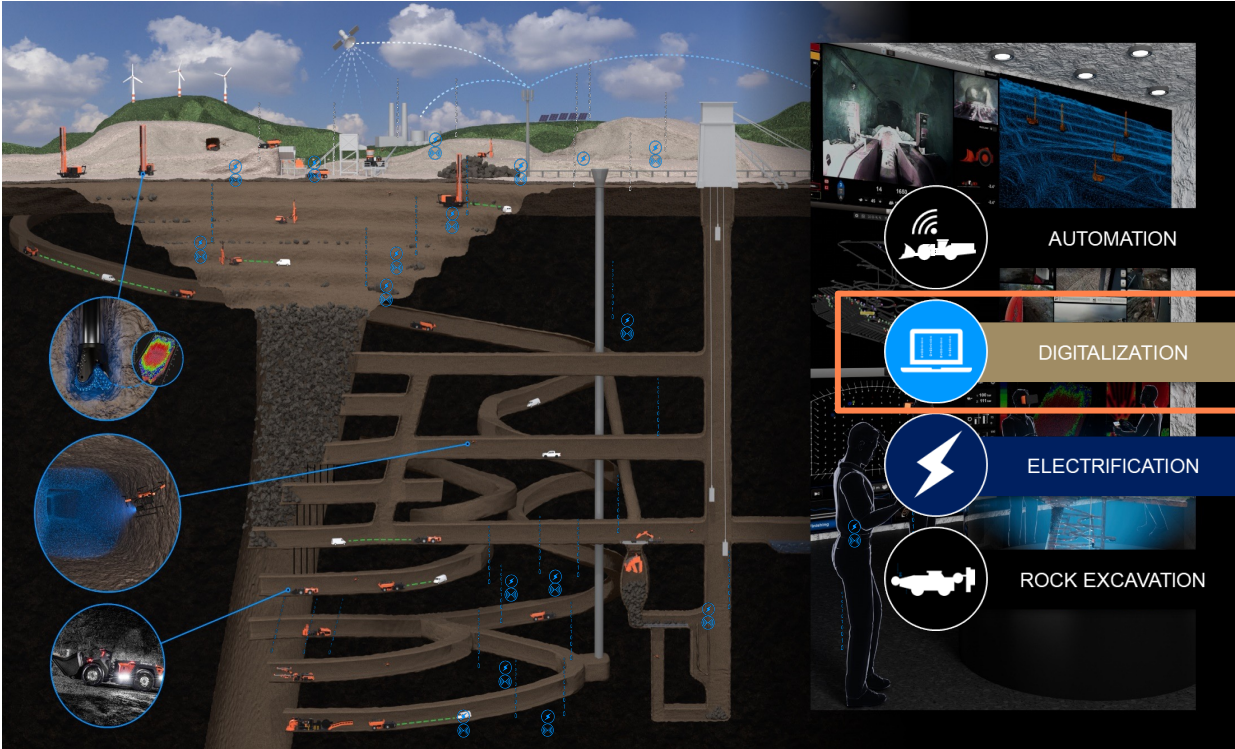
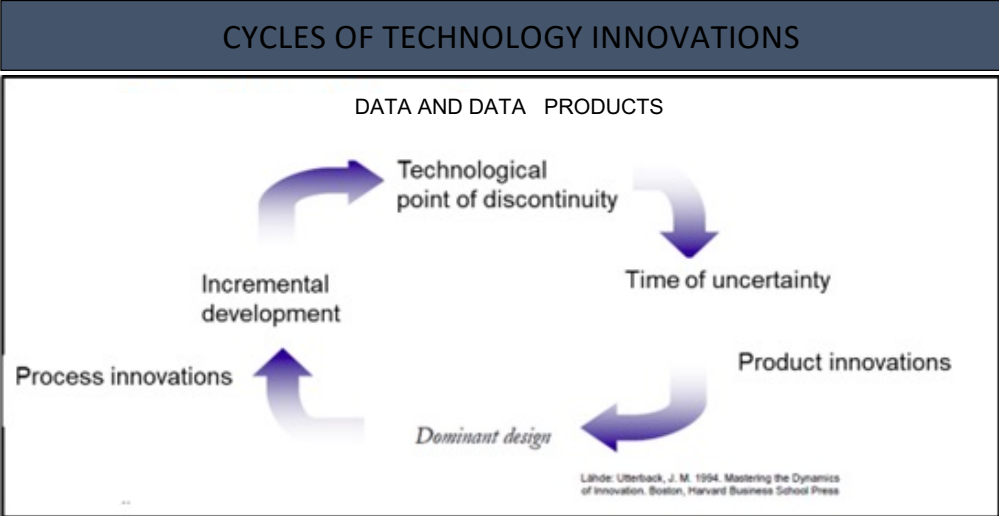
## Case SIX Mobile Work Machines akkupassi



# Research & Technology Development Key Enabler for Industry Transformation



” NEW REQUIREMENTS AND OPPORTUNITIES ”  
ESG REGULATION – SUSTAINABILITY – LIFE CYCLE OPPORTUNITIES  
NEW VALUE



” TRANSFORMATION THROUGH TECHNOLOGIES ”

**PUSH**



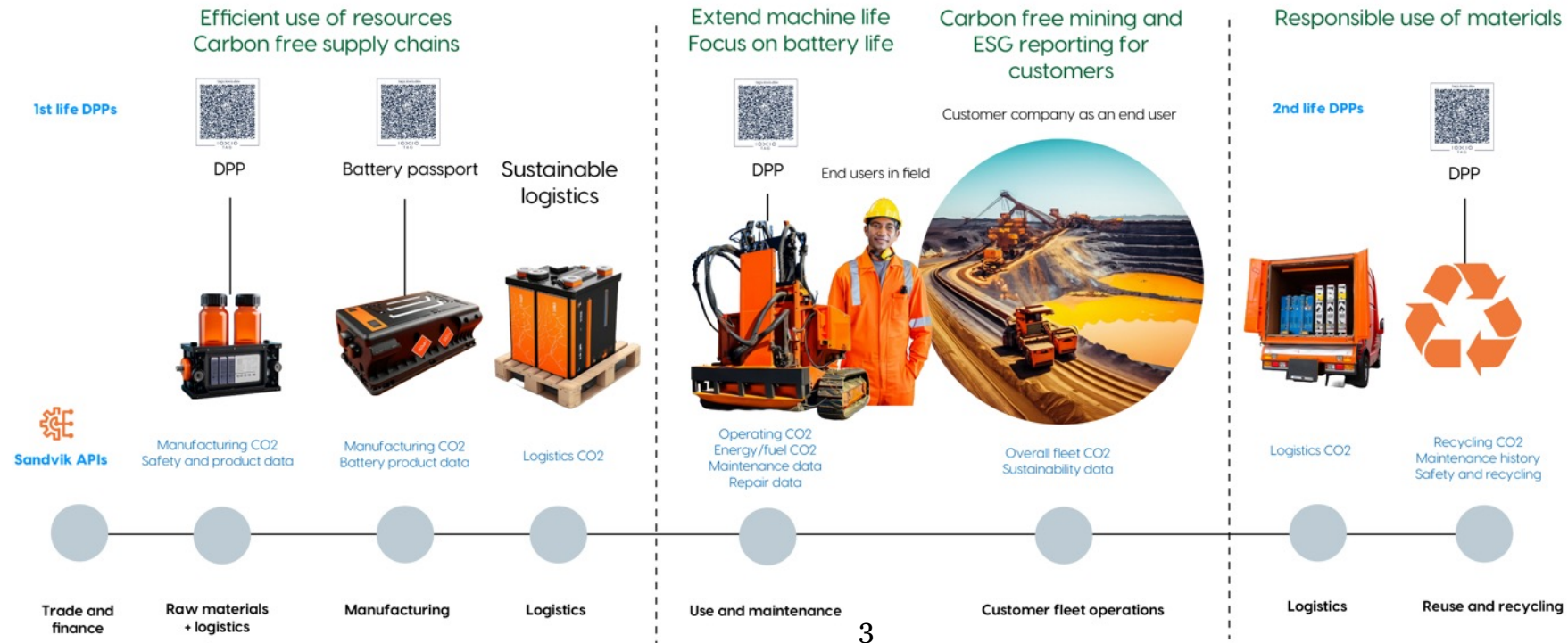
**PULL**



# We are testing how the DPPs can deliver the ESG data along the battery's lifecycle

How global end users in mines and ports can connect with machine's and battery's manufacturing ESG data just by reading the QR-code on the side of the machine

How the battery health data read directly from the battery QR-code can be used in sustainable finance of new batteries and to promote responsible 2nd life and recycling



# Pilot Companies: Sandvik and Kalmar



The **Sandvik Group** is an international high-tech industrial conglomerate whose solutions enhance customers' operational productivity, profitability, and sustainability in the manufacturing, mining, and infrastructure industries.



*Sandvik is piloting with the most advanced underground drill rig made in Tampere that makes it possible to reduce emissions in mines*



**Kalmar** provides load handling solutions and services for ports, terminals, distribution centers, and heavy industrial use. Automation of terminals and energy-efficient container handling are pioneered by the company. Every fourth container globally is moved through the use of a Kalmar solution. Each of your transports is optimized through our extensive product range and global service network, and our ability to seamlessly integrate different terminal processes.

*Kalmar is piloting with electrified straddle carrier used to make global ports more ecological*



# WHAT DATA EU WANTS IN BATTERY PASSPORT AND DATA ACT?

Lifecycle stage data  
(Battery Directive - manuf-raw mat / use / end of life)

Carbon footprint data  
(Battery Directive)

Battery passport data  
(Battery Directive)

Static data (Battery Passport) *vrs*  
Dynamic data (Battery Passport / DataAct)

Mandatory data  
(Battery Directive)

*vrs*  
Voluntary data  
(Battery Directive)

Public data  
(Battery Directive)

*vrs*  
Restricted data  
(Battery Directive)

(Battery Passport / Ecolabel)  
Data carrier i.e. QR-code  
Vendor domain  
Generic product identifier  
Unique identifier

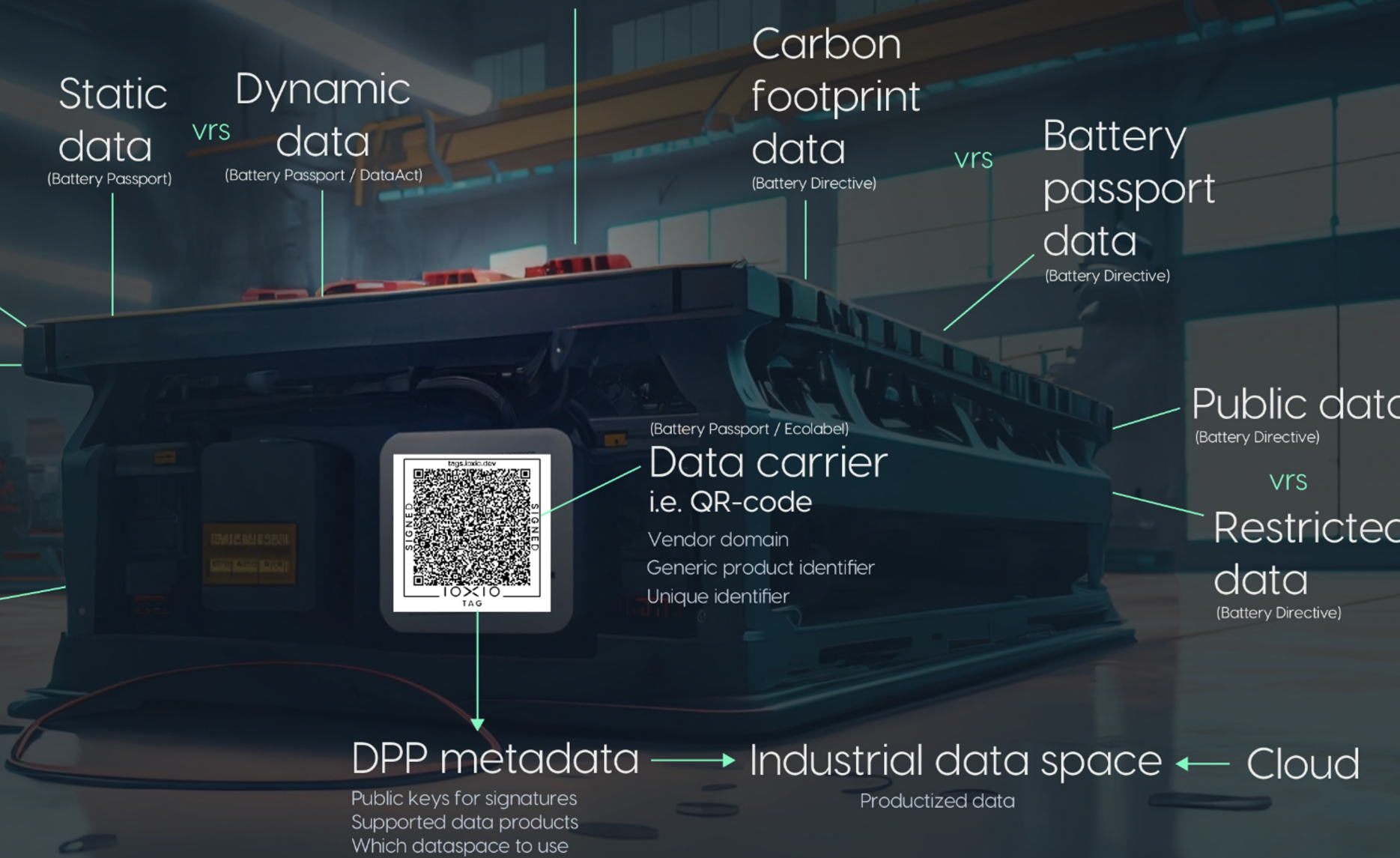
Critical raw material data  
(Critical Raw Minerals Act)



DPP metadata  
Public keys for signatures  
Supported data products  
Which dataspace to use

Industrial data space  
Productized data

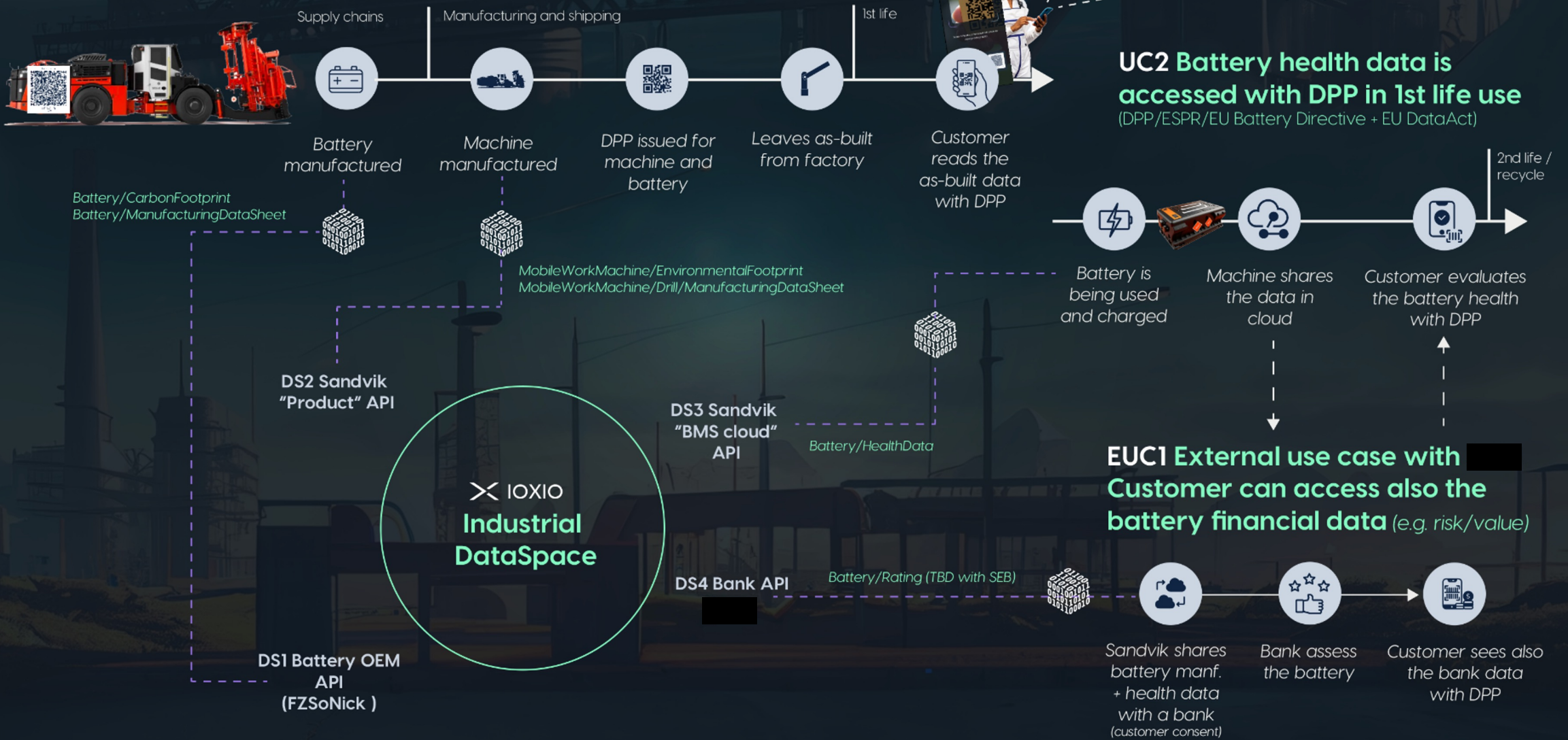
Cloud





# TEST USE CASES FOR SANDVIK'S FIRST BATTERY PASSPORT DPP PILOT

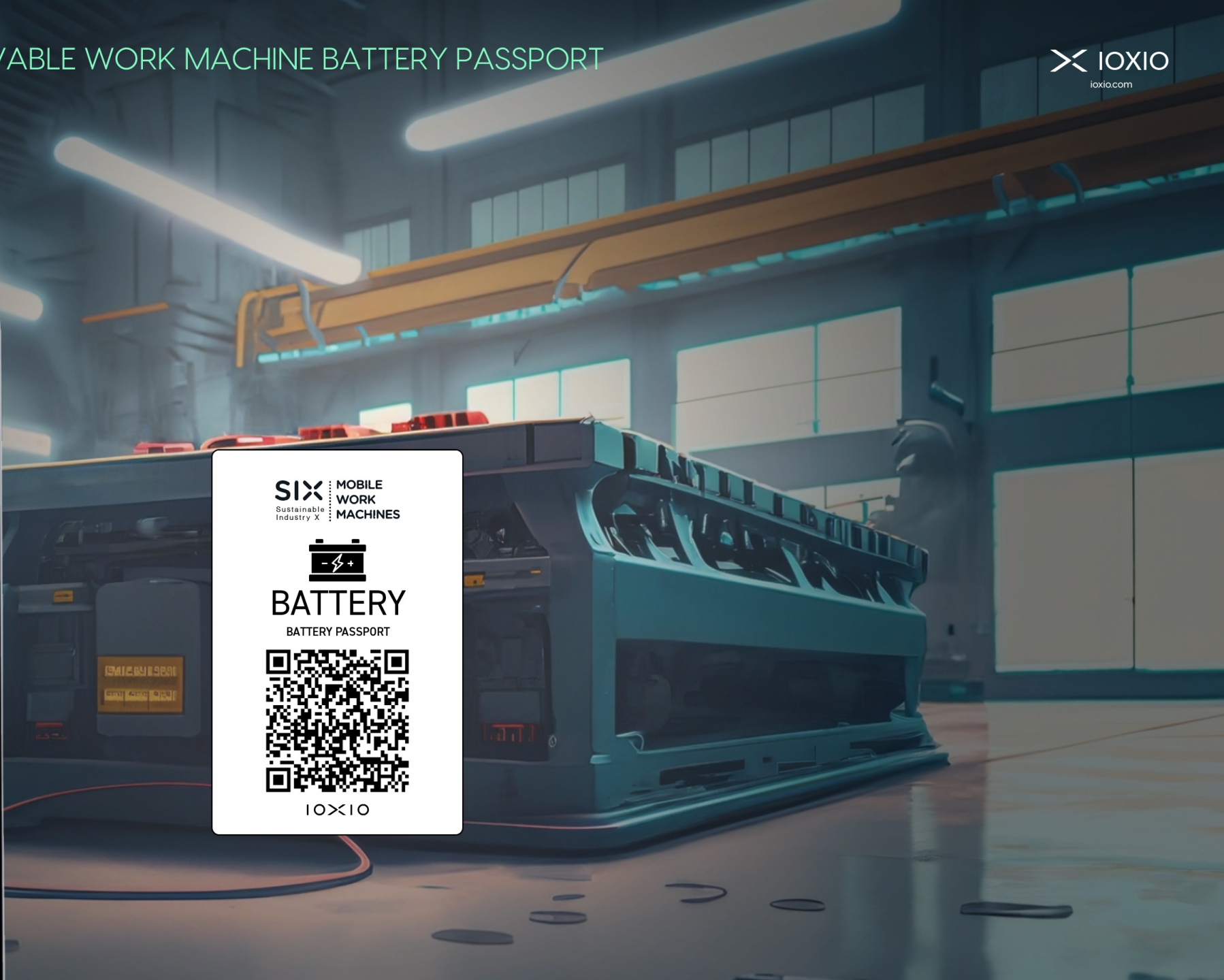
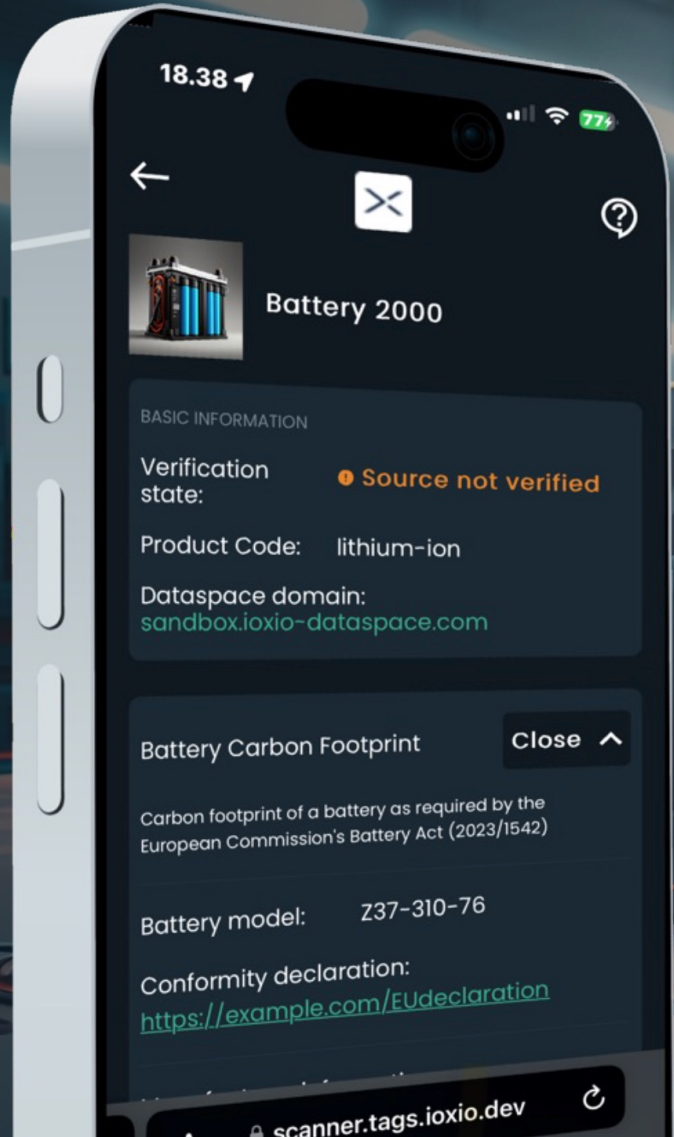
## UC1 DL422iE Jumbo is delivered to a new customer with FZSoNick battery and battery passport (DPP/ESPR/EU Battery Directive)



## UC2 Battery health data is accessed with DPP in 1st life use (DPP/ESPR/EU Battery Directive + EU DataAct)


## EUC1 External use case with Customer can access also the battery financial data (e.g. risk/value)





9:41

SANDVIK



### Battery Type 1

BASIC INFORMATION

Verification state: Trusted

Product code: sodium-ion-75kWh

Identifier: 660e8400

Dataspace domain:  
[sandbox.ioxio-dataspace.com](https://sandbox.ioxio-dataspace.com)

Carbon Footprint Fetch >

Manufacturing Data Sheet Fetch >


Health Fetch >

Battery value Fetch >

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IOXIO

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### Sandvik DL422iE

BASIC INFORMATION

Verification state: Trusted

Product code: 177389-09633

Identifier: RP5SN0190A1

Dataspace domain:  
[sandbox.ioxio-dataspace.com](https://sandbox.ioxio-dataspace.com)


Manufacturing Datasheet Fetch >

Environmental Footprint Fetch >

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### Sandvik DL422iE

BASIC INFORMATION

Verification state: Trusted

Product code: 177389-09633

Identifier: RP5SN0190A1

Dataspace domain:  
[sandbox.ioxio-dataspace.com](https://sandbox.ioxio-dataspace.com)

Manufacturing Datasheet Close ^

Returns the manufacturing data sheet of a Sandvik underground drill rig

Product Name: BEV Longhole Drill

Manufacturer Information: Sandvik Plc

Boom coverage: 3 m

Tramming distance: 3 km


Hole Length: 54 m

Drilling Power: 160 kW

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### Sandvik DL422iE

BASIC INFORMATION

Verification state: Trusted

Product code: 177389-09633

Identifier: RP5SN0190A1

Dataspace domain:  
[sandbox.ioxio-dataspace.com](https://sandbox.ioxio-dataspace.com)

Manufacturing Datasheet Fetch >

Environmental Footprint Close ^

Returns the manufacturing emissions of a underground drill rig

Pre Production Footprint: 2345.7 CO2e/kg

Main Production Footprint: 3504.4 CO2e/kg

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MoRE  
DATA

**THANK YOU**

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