



# How to detect & prevent thermal runaway in eBus batteries - Kollektivkonferansen 2022

**Antti Vainio, Policy Manager Nordics, ChargePoint**

10 November 2022

# ChargePoint at a glance



# Complete Fleet Solution Portfolio

## ***Consulting***



Consulting  
and Design



Energy  
Planning

## ***Design Build***



Project  
Management



Construction  
Installation

## ***Hardware***



Charging  
Hardware



## ***Software***



Charge &  
Energy Mgt.



Telematics  
Integration

## ***Service***



Service &  
Maintenance

## ***Finance***

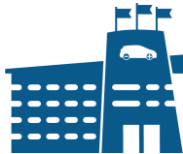


Project  
Finance

# Big footprint in the public transport world



**All-in-1**  
cloud-based platform



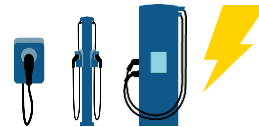
**60+ OEMs**  
vehicles & chargers



**50%+ market share**  
Connected eBuses



**6.8K+ ports deployed for**  
**750+ fleets**



**98M+**  
Charges delivered

# Customers and partners

## OEMs and hardware players

### Vehicle OEMs



## Public transit operators & authorities



### Charger manufacturers



### Battery suppliers



## Commercial fleets



# What is driving electrification?



# Policy makers have a key role in enabling electrification



## GREEN NEWS

**Norway strengthens emissions targets ahead of COP27**

## European Union bans sale of petrol and diesel cars from 2035 to boost electric vehicle uptake

Posted Sat 29 Oct 2022 at 6:11am





REUTERS®

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Charged



Aa

2 minute read · October 14, 2022 4:16 PM GMT+2 · Last Updated 14 days ago

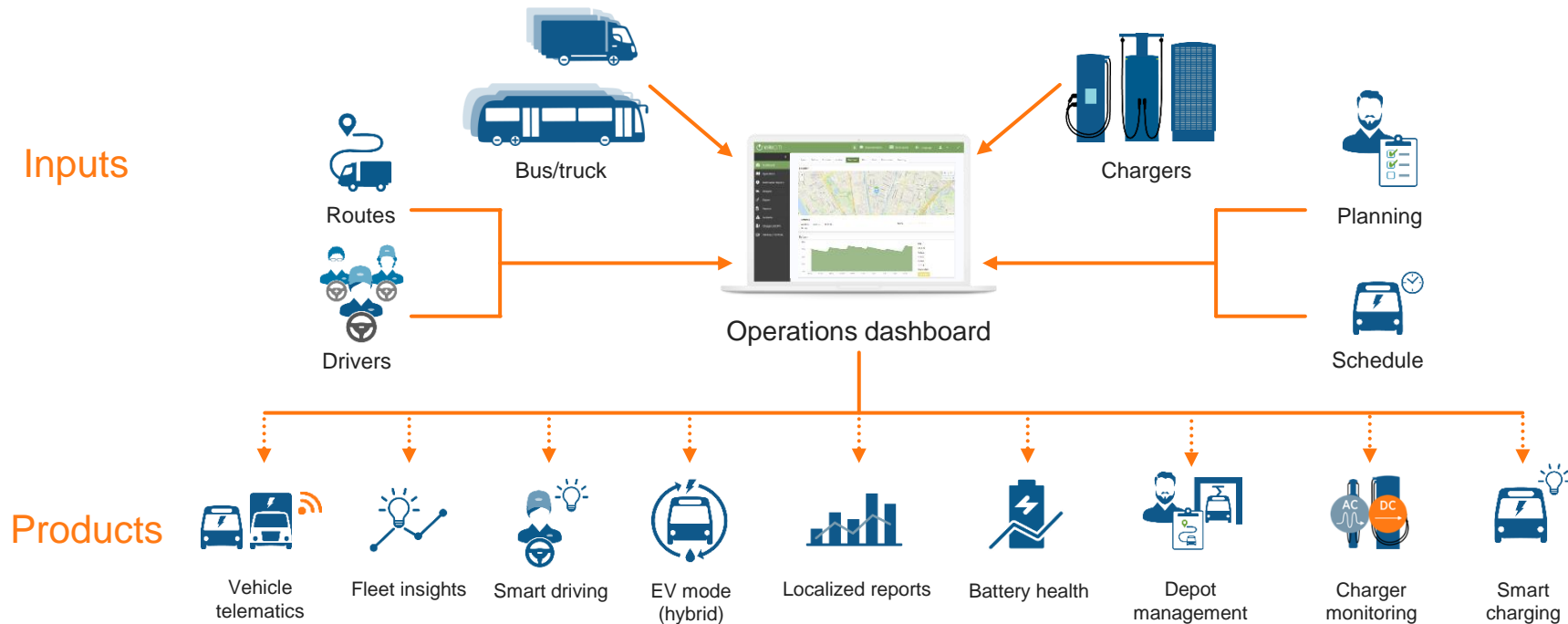
## E-bus deal puts Oslo on track for zero-emissions public transport goal

By Victoria Klesty





# Software is as important as hardware in electrification



# eBuses in the news... for the wrong reasons

**S** Sustainable Bus

## Home Transport for London recalls 90 double decker e-buses

...

Transport for London has recalled 90 electric buses after a fire involved one of them on Sunday. The precautionary measure has been decided...

24 May 2022



**L** The Local

## Paris suspends electric bus fleet after fires

Following a second blaze on Friday morning, in which no one was hurt, "RATP has taken the decision to suspend use of 149 electric buses" of...

29 Apr 2022



**evs** InsideEVs

## Stuttgart Bus Depot Fire Likely Started By Charging Electric Bus

The city of Stuttgart in Germany received two fully-electric Mercedes-Benz eCitaro buses, both of which were equipped with very advanced...

13 Oct 2021



## Numbers in perspective

- + 200 bus and coach fires in Scotland (2015-2021)



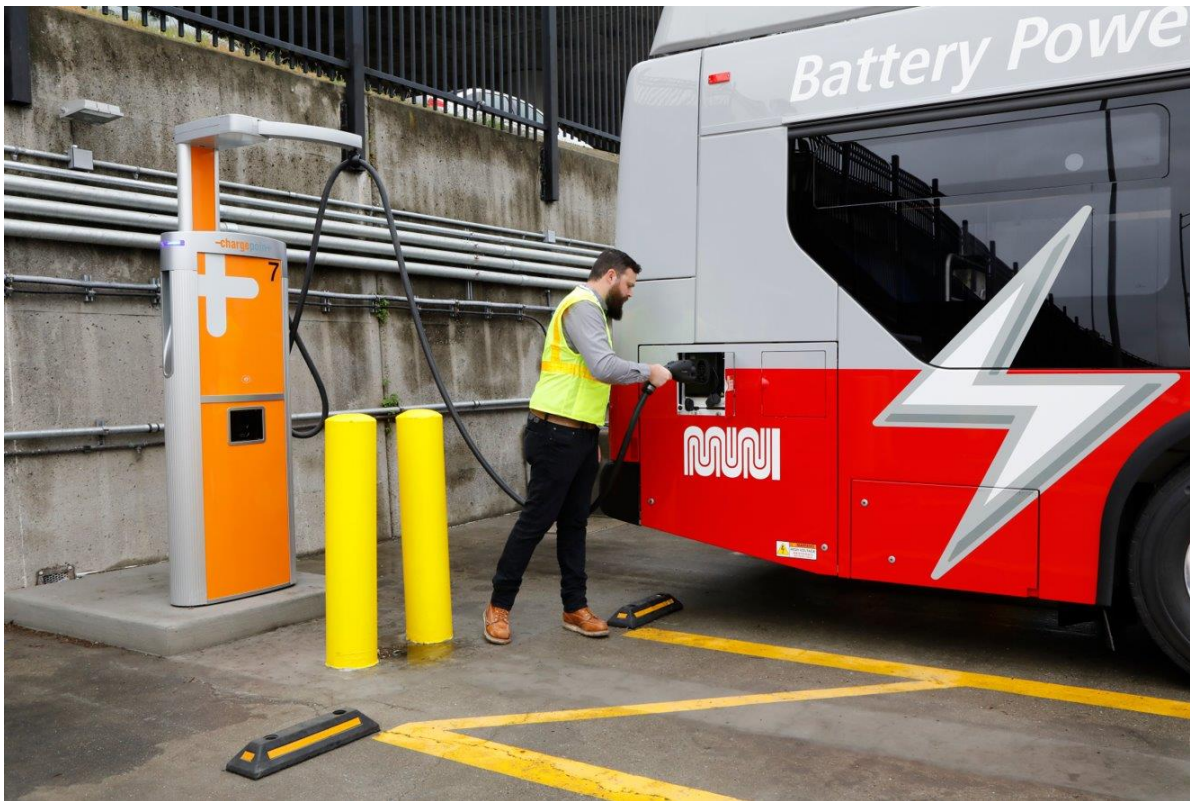
- + Government data show gasoline vehicles are up to 100x more prone to fires than EVs



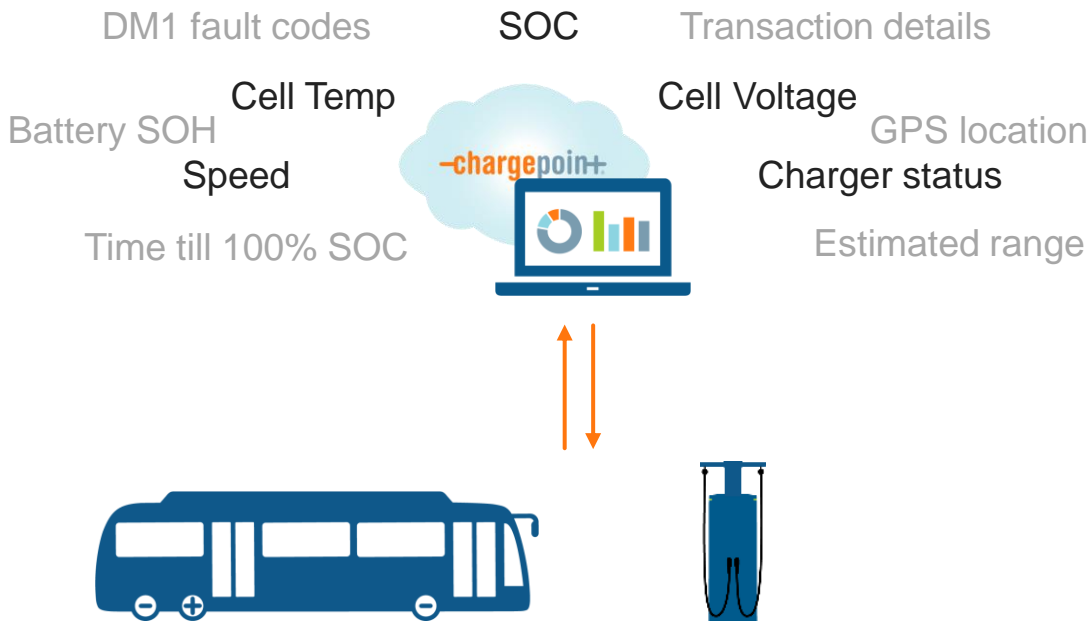
- + ~1-2% of all busses registered US & EU are involved in a fire incident each year



# What to do about thermal runaway



# Data from buses and chargers becomes crucial



# Steps for prevention

Level 1: Monitor

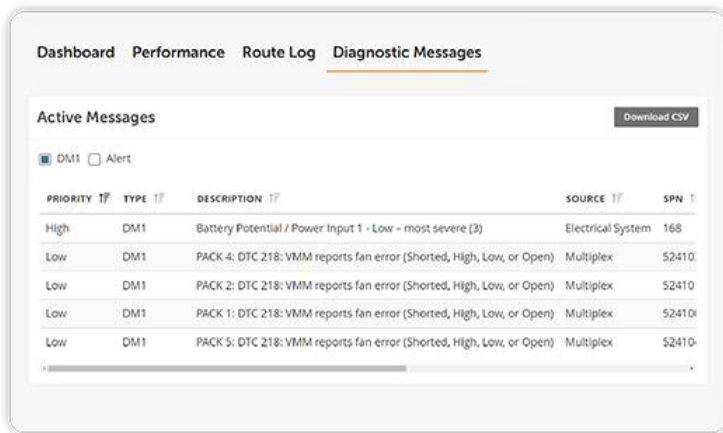
Level 2: Alert

Level 3: System Acts

## Level 1: Monitor all the data from your eBus & charger



## Level 2: Alert via email, SMS and Dashboard notifications

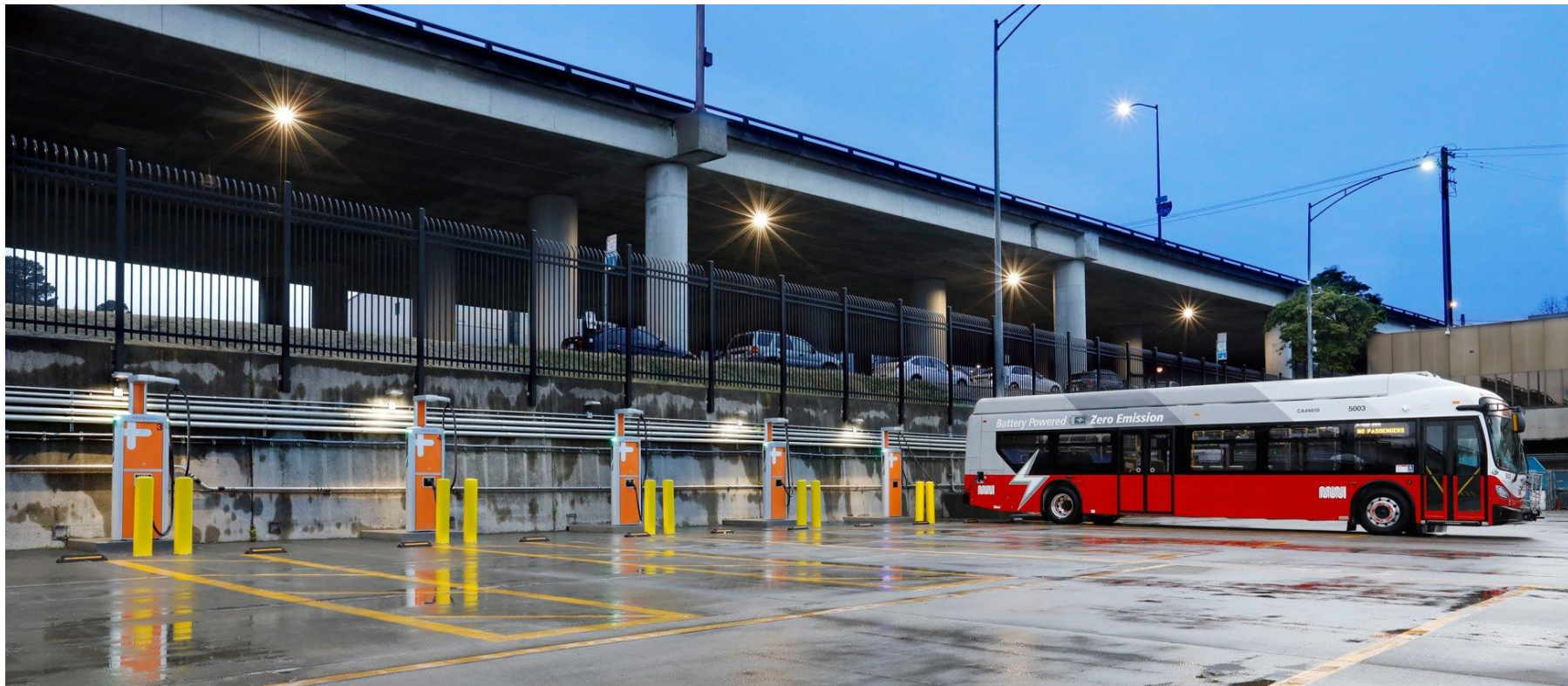


The screenshot shows the 'Diagnostic Messages' tab in the ChargePoint dashboard. It features a table of active messages with columns for Priority, Type, Description, Source, and SPN. The messages are filtered by 'DM1' and include a 'Download CSV' button.

Dashboard Performance Route Log Diagnostic Messages				
Active Messages				
<input checked="" type="checkbox"/> DM1 <input type="checkbox"/> Alert <a href="#">Download CSV</a>				
PRIORITY	TYPE	DESCRIPTION	SOURCE	SPN
High	DM1	Battery Potential / Power Input 1 - Low - most severe (3)	Electrical System	168
Low	DM1	PACK 4: DTC 218: VMM reports fan error (Shorted, High, Low, or Open)	Multiplex	52410
Low	DM1	PACK 2: DTC 218: VMM reports fan error (Shorted, High, Low, or Open)	Multiplex	52410
Low	DM1	PACK 1: DTC 218: VMM reports fan error (Shorted, High, Low, or Open)	Multiplex	52410
Low	DM1	PACK 5: DTC 218: VMM reports fan error (Shorted, High, Low, or Open)	Multiplex	52410



## Level 3: System acts immediately and stop the charging



# Key Learning Point

To reach the highest level it is crucial to have both bus and charger data in one platform.

# This is only one example of what data and quality software can do





Haakon Olsen



Antti Vainio

Thank you.