



# SAP Innovation Awards 2019 Entry Pitch Deck

A Competitive Edge in the Volvo Ocean Race

AkzoNobel



<https://youtu.be/EPBoSp61aa8>

# A Competitive Edge in the Volvo Ocean Race

## AkzoNobel



# AkzoNobel

### “Quote”

“If we can help sailors improve performance in the middle of the ocean, just imagine what we can do for our business.”

Massimo Mercuri,  
Director for Center of  
Expertise for Digital  
Innovation & Strategy,  
AkzoNobel.

### Challenge

AkzoNobel as a sponsor was looking for a technology partner for their team AkzoNobel in the Volvo Ocean Race which would give the sailing team a competitive edge and gain more publicity for their sponsoring project.

### Solution

SAP developed a SAP Leonardo IoT Edge and SAP Cloud Platform based solution which captured biometric data from the crew and IoT data from the boat, built a predictive analytics model in the cloud and deployed the model to the boat to predict crew performance.

### Outcome

The biometric edge solution increased insight in team AkzoNobel performance and recovery. AkzoNobel increased brand awareness via traditional and social media.

**602.52**

nautical miles

Team AkzoNobel set a record  
24 hour distance

**38.2 M**

media impressions

generated by SAP for  
AkzoNobel

**18.000**

data points in 21 day leg

For each crew member  
enabling predictive model



## Business Challenge & Objectives

AkzoNobel as sponsor of the 2017-1018 edition of the Volvo Ocean Race identified the need for a technology partner which could also help to generate publicity for their brand, both for external prospects and customers as well as employees.

While the participating boats were identical, team AkzoNobel could have a competitive advantage gained by smart technologies, capturing biometric data and using these in a predictive model. The resulting human stories could be used to connect with people, which helps to increase brand awareness globally.

From Design Thinking session:

Establish a technology partner for team AkzoNobel which would

- Design, build and operate a biometric edge solution, capturing crew and boat sensor data during the race legs while compliant with Race regulations
- Analyze all gathered data in a predictive Cloud environment
- Establish processes to provide feedback to crew during race legs and stopovers to optimize their performance
- Maximize publicity for team (AkzoNobel) via all media channels



## Project / Use Case Details

The project came with some unique challenges and requirements:

- Race boat needed to store, process captured data and present insights in autonomous solution on the “edge” as connection with the Cloud was not allowed while racing.
- Biometric sensors needed to be identified and connected, boat data needed to be captured as well
- A predictive and learning biometric performance model needed to be built in the Cloud and deployed to the boat to process new data while racing
- An autonomous infrastructure needed to be designed and built with minimum impact on boat and crew as the boat was remote and crew could not do any “maintenance”

SAP as technology partner built a prototype using SAP Leonardo IoT Edge deployed on a 75EUR Raspberry Pi device (!), SAP Cloud Platform and Predictive Analytics in a few months, enabled it to use new biometric sensors (and its associated non-SAP architecture) within weeks, built a predictive model which learned during the race and created a huge amount of publicity and stories highlighting the innovative character in the global press.





# Benefits and Outcomes

## Business / Social

**602.52**

nautical miles

Team AkzoNobel set a record 24 hour distance which, in addition to other remarkable results, generated a lot of interest for team AkzoNobel and the AkzoNobel brand. While it is impossible to quantify the contribution of the biometric edge solution, the fact remains that only team AkzoNobel had insight in their biometric data and had calibrated sleep and food to optimize performance.

The media value of the project exceeded their key performance indicator after the strong finish .

## IT

**38.2 M**

media impressions

generated by SAP for AkzoNobel during the global coverage of the race with an accent on IT audience.

The use case of Edge computing, bringing intelligence to the Edge on top of IoT data was generally perceived as very relevant for a more generic situation, the inclusion of biometric data generated a lot of attention, the use of predictive technologies on a Cloud platform was a breakthrough in 2016 and the combination of all these elements in such a harsh sailing environment mad it stand out.

## Human Empowerment

**18.000**

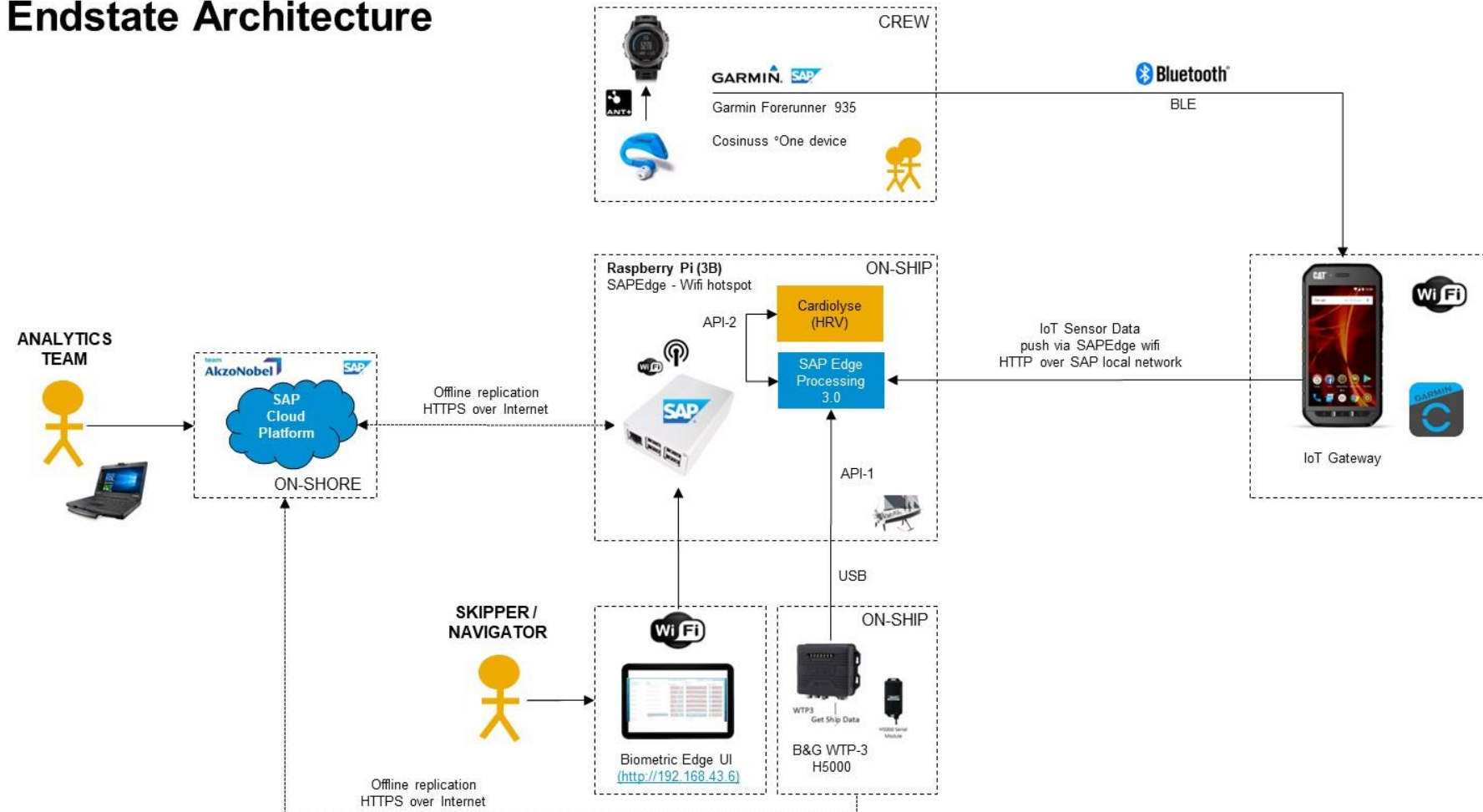
data points in 21 day leg

Never before was it possible to capture for each crew member so much data in endurance sports. In combination with boat IoT data (capturing weather, sea state, sail and rudder data) there was enough data to build and then refine a predictive model which ‘learned” after new data became available after each race led ended. Crew members slept (even) less, burned more calories than expected; and individual results allowed the crew to fine tune their daily practice while racing.



# Architecture

## Endstate Architecture





## Deployment

Date of Deployment or POC: Solutions on boat and Cloud deployed

Number of live users: 9 crew members, 1 performance coach

### SAP Technologies Used:

SAP Leonardo IoT Edge	Live during race October 2017 till July 2018 (end of race...)
SAP Leonardo Foundation (SCP)	Live during race October 2017 till July 2018 (end of race...)
SAP Cloud Platform	Live during race October 2017 till July 2018 (end of race...)
SAP Predictive Analytics (SCP)	Live during race October 2017 till July 2018 (end of race...)
SAP SQL anywhere	Live during race October 2017 till July 2018 (end of race...)

Server Processor: Raspberry Pi (for Leonardo IoT Edge)

Linux Distribution: Not applicable





# Emerging Technologies and Use Cases

The following Emerging Technologies and use-cases are part of the project and describe the contribution

	Technology or Use Case	Yes/No	Contribution to Project
1.	Machine Learning / Artificial Intelligence	YES	Used predictive analytics model with learning capabilities (SAP data science team Bucharest)
2.	IoT	YES	IoT Edge (capturing data and applying model)) biometric and boat data (streaming)
3.	3D printing	NO	
4.	Blockchain	NO	
5.	API Economy / Integrate the Intelligent Enterprise	NO	
6.	Cloud Native / Event Based Architectures	NO	
7.	Extending the digital core with SAP CP / ABAP in SAP CP	NO	
8.	SAP Leonardo Application ( extending SAP application, using Industry Innovation Kits or result of Design Thinking workshop)	YES	Leonardo IoT Edge in race legs (no internet connection) to capture & process data against predictive model = Intelligent Edge! Model developed on Cloud Platform.