

Welcome!





Be #LikeABosch



Hi!
Ask your questions when they
pop-up during the presentation



Bosch Presentation Congres 2025

Agenda

01

Who am I

Let me introduce myself.

02

Who we are

Robert Bosch GmbH in short.

03

Thin Metal Technologies

The business unit in Tilburg.

04

Trevally implementation

How did we implement Trevally and what did we learn from it.

05

Shopfloor assistant

Our own chatbot specific for production connected to Trevally documentation.



Dirk van Looij, 47 years,
1 daughter, Tilburg



Implementation Manualmaster @PS-CT
building OPL-system
5 dgn sailing on a volvo ocean race boot



HBO Technische Bedrijfskunde
Six Sigma Greenbelt, Shainin,
Bosch Problem Solving



Golfen, hockey, surfing, sailing,
cooking



languages: NL, EN, DE
the connection between customer and supplier
Office, SQL



Manager, line engineer,
production engineer, account manager
IT solutions engineer

Who we are

Robert Bosch GmbH



94%

Robert Bosch
Stiftung GmbH

5%

ERBO II GmbH/
Bosch family

1%

Robert Bosch
GmbH

Who we are

Our business sectors



62%

Mobility



7%

Industrial Technology



22%

Consumer Goods



8%

Energy and Building Technology

Who we are

Our company in figures

In 2024



90.3

billion euros
sales revenue



3.1

billion euros EBIT
from operations



417 900

Bosch associates
worldwide at year-end
(approx.)



490

subsidiaries and regional
companies (approx.) in
more than 60 countries

Who we are

Our company around the globe

In 2024



Europe



49%

share of sales



44.5bn

sales revenue



246,100

associates (approx.)



Asia Pacific*



31%

share of sales



28.0bn

sales revenue



118,800

associates (approx.)



Americas



20%

share of sales



17.8bn

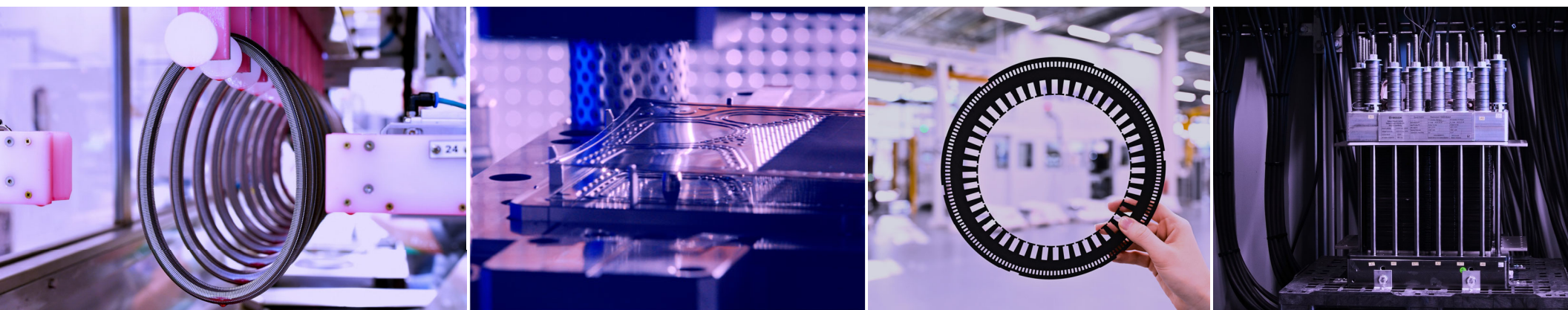
sales revenue



53,000

associates (approx.)

* including other regions



Bosch Thin Metal Technologies

Innovation. Precision. Mass-manufacturing.



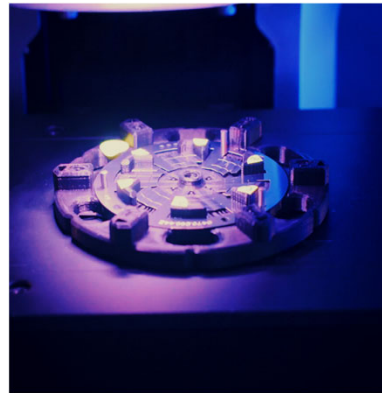
Bosch Thin Metal Technologies

Business Unit Portfolio



Pushbelt

Mass-produced.
Efficient.



Gas Foil Bearing

High-performance.
Mass produced.



Power-to-X

Clean energy.
Industrialized.

Bosch Thin Metal Technologies

Locations

Tilburg Plant

Business leadplant and production plant
for e-stacks; gas foil bearings.
Developing plant for energy stacks

Ho Chi Min Plant

Main production plant for Push belt.

*Geographic borders
// use ungroup function
to color single countries



Implementation of ManualMaster / Trevally

documents, startpage, forms

ManualMaster / Trevally

System setup in Bosch PS-CT



23400 Active documents

5236 folders

131 layouts

413 templates

547 definitions

1757 standards



5400 users

325 departments

875 jobs

468 groups



5 domains

1280 spaces

88 Custom reports

Trevally implementation

Trevally modules

- 1 **Version controlled documents**
- 2 **Production location in Vietnam transferred**
- 3 **Webforms**
- 4 **Interface with chatbot(s)**



TREVALLY
software by manualmaster

ManualMaster / Trevally

Where we came from

Excel links:

Wijziging Overzicht		Proto		Digitaal ODS afsluiten															
1	Procesdocument	2	Acceptatiestandaard	3	Meetvoorschriften	4	Reactieplan	5	Benodigdheden, onderhoud, slijtend en stellingen (BOSS)	6	Standard overlap	7	Proceskeuring	8	Werkinstructies	9	Werkinstructies algemeen	10	File verwijderen
SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110		SNA-061-081-095-110	

Wijziging Overzicht

Mappen

wijziging overzicht

Proces document

Acceptatiestandaard

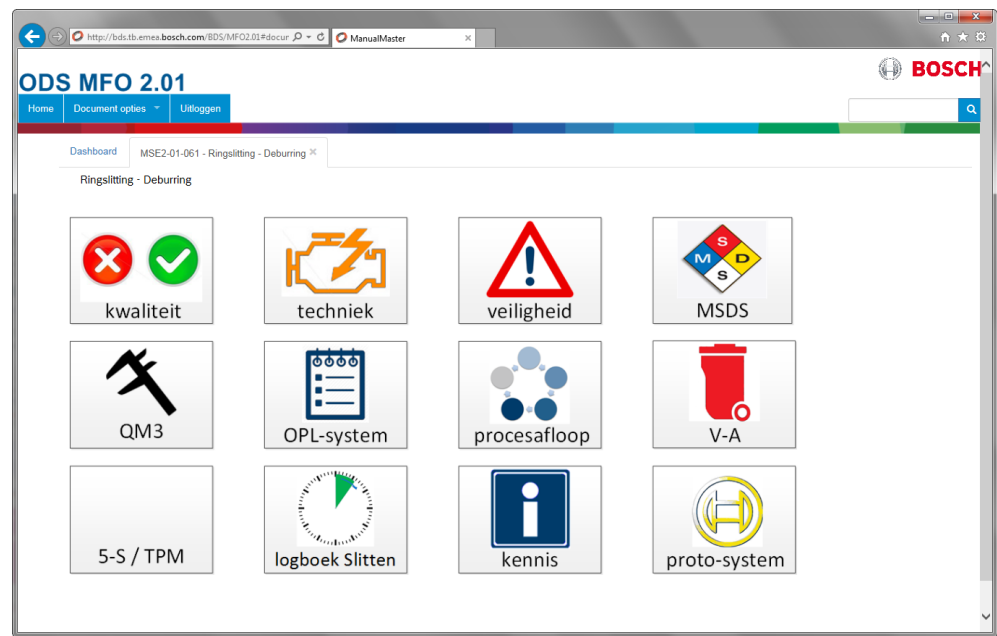
Meetvoorschriften

Reactieplan

BOSS

document type ordered

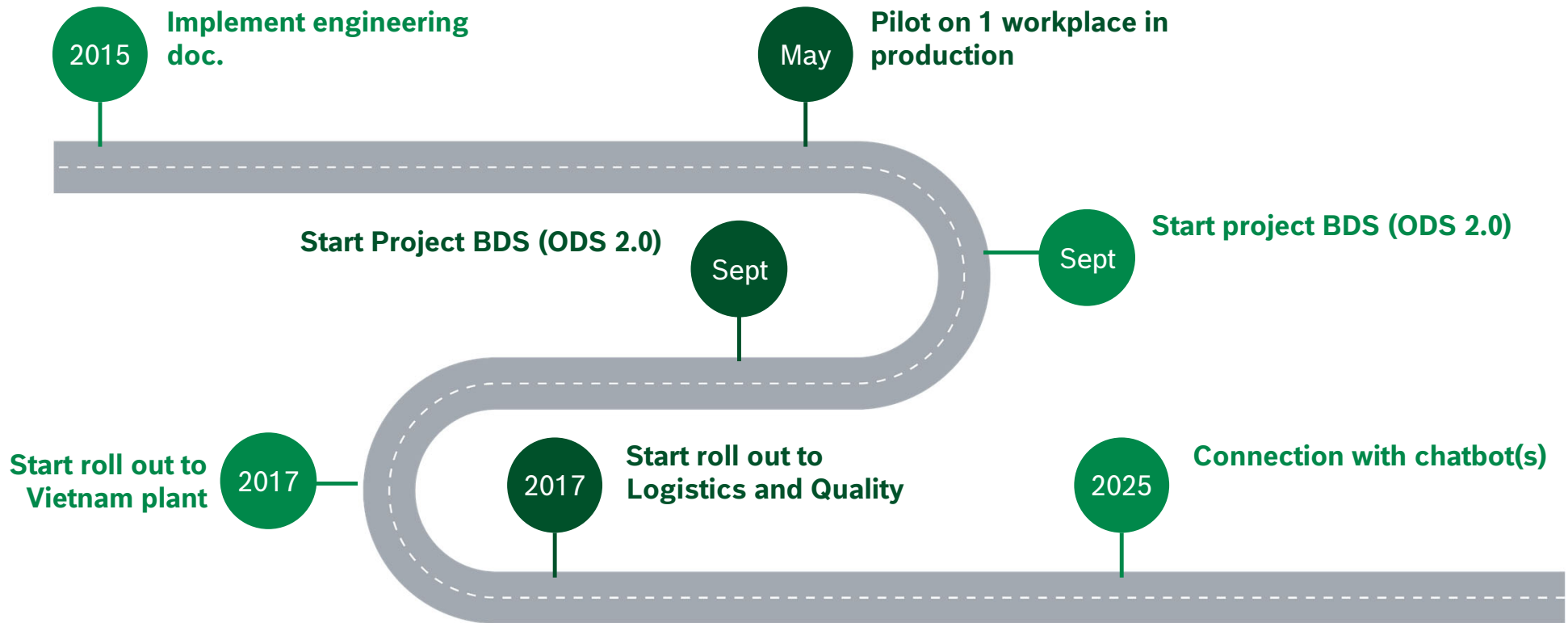
ManualMaster:



situation based

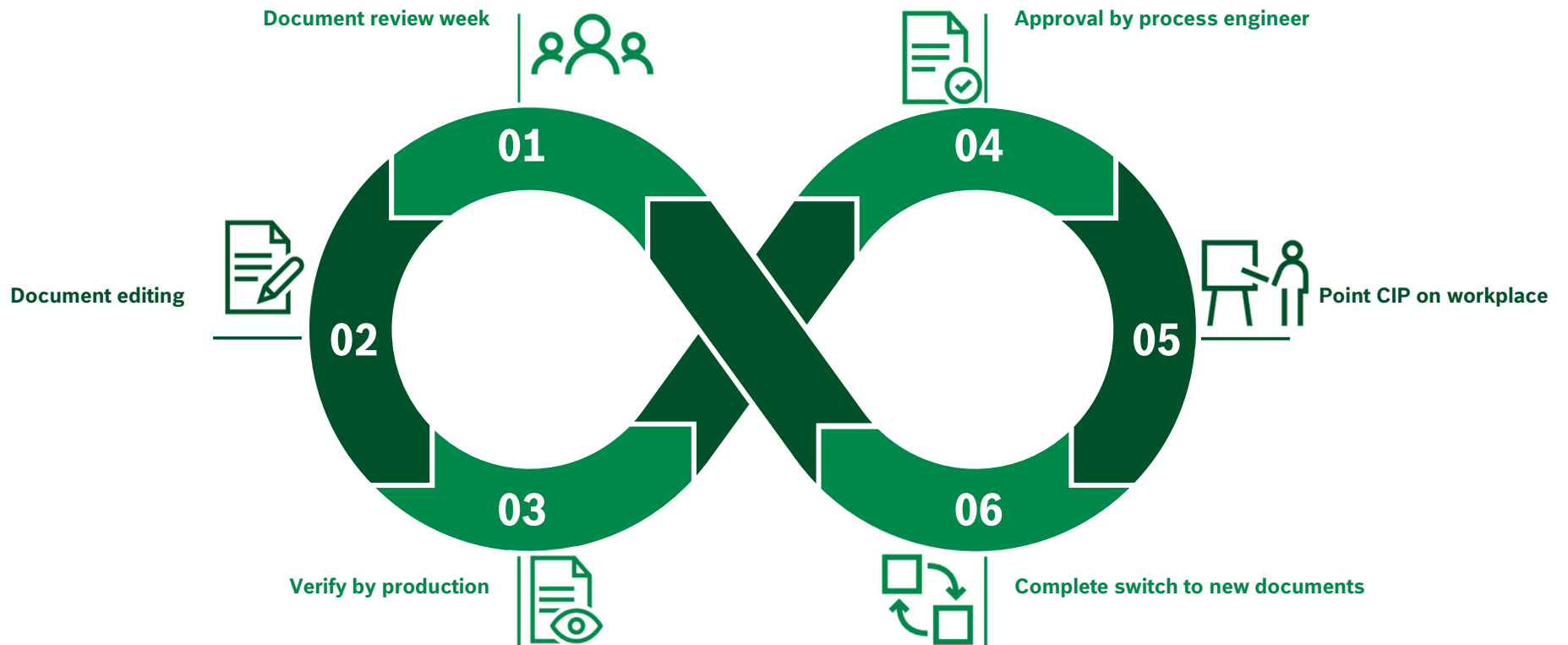
Trevally implementation

The road of trevally @Bosch



Trevally implementation

Roll out in production



Bosch Thin Metal Technologies

Lessons learned from initial roll out

Commitment of operators was higher than usual

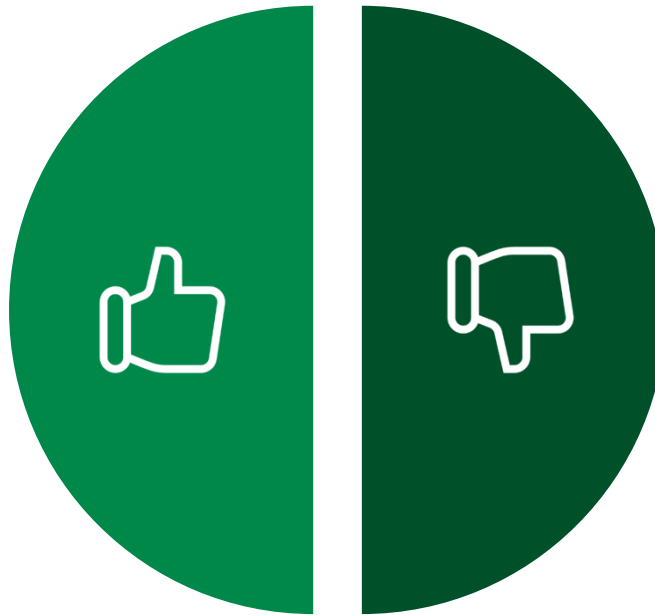
1

Alignment between operator and engineer was very beneficial

2

Documentation used for multiple processes/lines were centralized

3



1

Process took longer due to collaboration

2

Engineers are difficult to move to new way of working

3

Operators who were not directly involved where more reluctant

Bosch Thin Metal Technologies

Bilingual

- 1 Together with ManualMaster all text in client and website translated to Vietnamese
- 2 Documents where/are translated by engineers in Vietnam in Vietnamese and English
- 3 For production local language is leading so document starts with that.

Bosch Inside Portal

ManualMaster Community

HcP Dashboard Navigation Page

HcP MM Document Dashboard

BOSCH

Home

Plant

Theme Design

Dashboard Design

Management

Logging

Logged on users

Document options

My Forms

User details

5 Tài liệu liên quan

[HcP-001781](#) Hướng dẫn vận chuyển Ring từ Deburring đến Ring Washing và Rolling

[HcP-001300](#) AM cho manual concept khu vực Rolling/AM for Manual Concept at Rolling area

[HcP-PFMEA-0126](#) PFMEA of Ring Deburring

6 Tài liệu phụ lục

Mã số & tên tài liệu	Yêu cầu về hồ sơ	
	Thời gian sử dụng/lưu trữ (năm)	Nơi cất giữ
Không áp dụng	Không áp dụng	Không áp dụng

7 Tóm tắt thay đổi

Phiên bản	Ngày	Tác giả	Ghi chú thay đổi
003	30-06-2023	Huynh Ba Minh Luan (HcP/MFE2.11)	Update new format of Pokayoke list Cập nhật format mới danh sách Pokayoke

8 Phê duyệt phát hành tài liệu

Tran Van Hau (HcP/MFE2.11) 30-06-2023

Nội dung tiếng Anh ở phần tiếp theo/ English content in the following section

1 Scope

[HcP/MSE2](#) – Deburring process

2 Objective

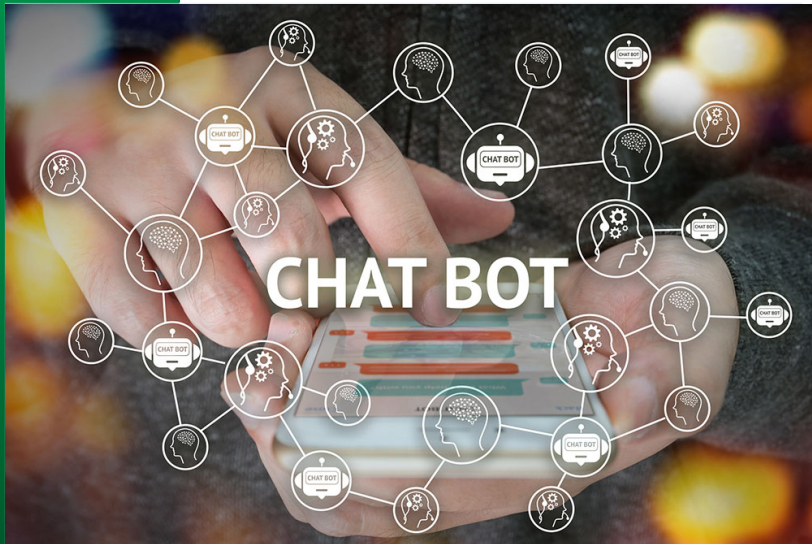
List of Poka Yoke for Deburring process



Shopfloor assistant @ TbP

Shopfloor assistant @ TbP

The need for a chatbot



Increase productivity and quality

- faster answering of question
- save time on support



Faster onboarding of operators

- minimize feeling of getting lost in documentation



Fix inconsistency of following documentation



Minimize production loss / failures

Shopfloor assistant @ TbP

Project phases

Requirements

Offline documents

Connect to Trevally

Test in Q-system

Test in production

Set up requirements

Setup doc storage offline

- Create sharepoints to have “buckets” for each process
- Copy a couple of documents to each bucket to test the segregation
- This text demonstrates how your own text will look when you replace the placeholder with your own text.

Connect to Trevally via API

- Setup space for each workplace documentation set.
- Setup API for downloading corresponding documents to sharepoint

Test separately

- Use test environment for PoC*
- Test if chatbot is not hallucinating
- Check if source is correct with answer

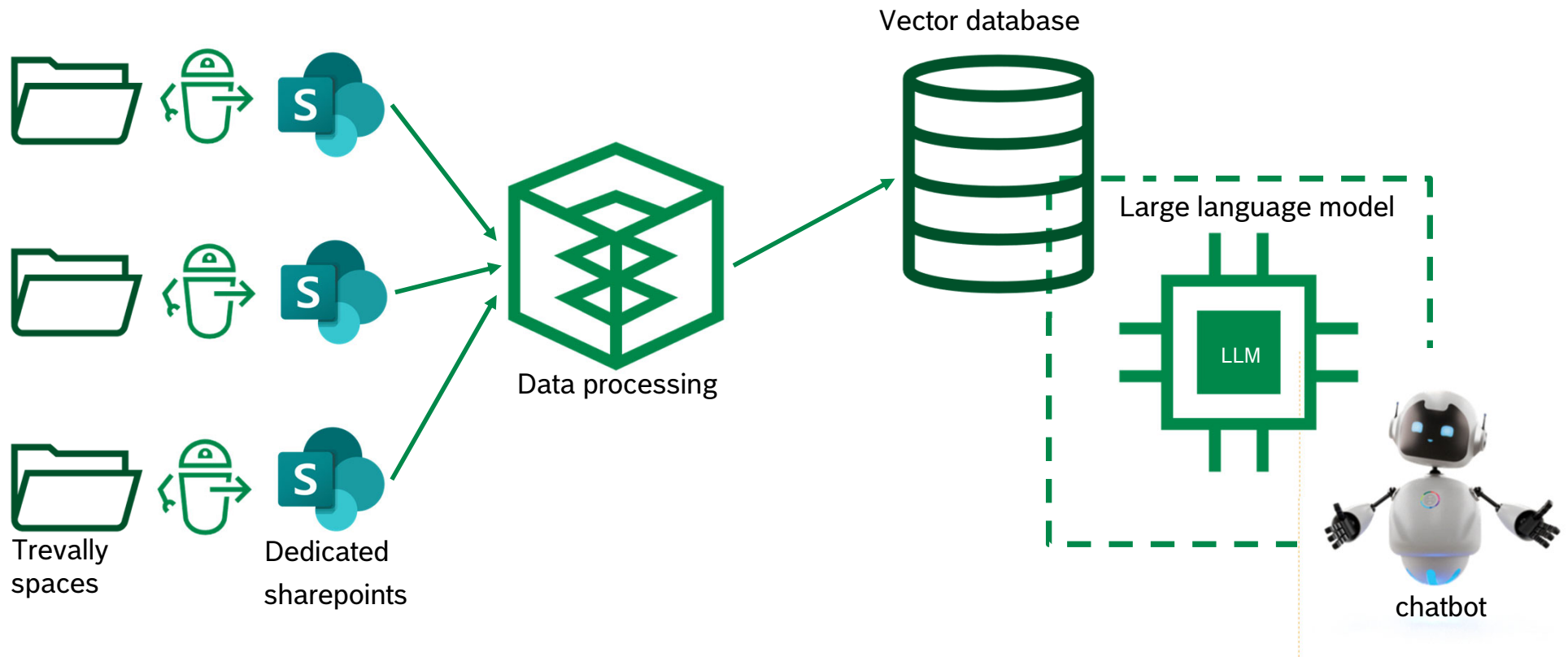
Test in production

- Use it with one workplace to see what effect is.
- Connect ticketing system to it if there is no/incorrect answer.

* PoC = Proof of Concept

Shopfloor assistant @ TbP

How is it connected



ShopfloorAssistant_TbP

van Looij Dirk (TbP/MFE2.2)

BOSCH

Privacy & Terms

New chat

Share current chat

YESTERDAY

schijnt de zon in sydney

...

Hi! How can I help you today?

schijnt de zon in sydney

Ik heb geen informatie over het weer of of de zon schijnt in Sydney in de beschikbare documenten. Zou je je vraag kunnen specificeren met betrekking tot een bepaald proces, datum, locatie binnen een fabriek of een specifiek apparaat?

Bronnen:- [TbP-008924 - dagelijkse poets SWC - 004.pdf](#)

de buffer bij de dema is vol wat moet ik doen

Als de buffer bij de DEMA vol is, moet je de buffers leegmaken. Volgens de instructies in het document TbP-008459 kun je dit doen door:

De indexeertafel omlaag te drukken en de buffer stator omhoog.

Rechts onder op de pijlen drukken om op de tweede bladzijde te komen.

Beide transportbanden 6 seconden aanzetten en dan stoppen.

Linksonder weer naar de eerste bladzijde gaan en de rotor en stator tafel omhoog sturen.

De opstartlamellen van de transportband verwijderen (deze zijn altijd afkeur vanwege de hoge kans op afwijkingen).

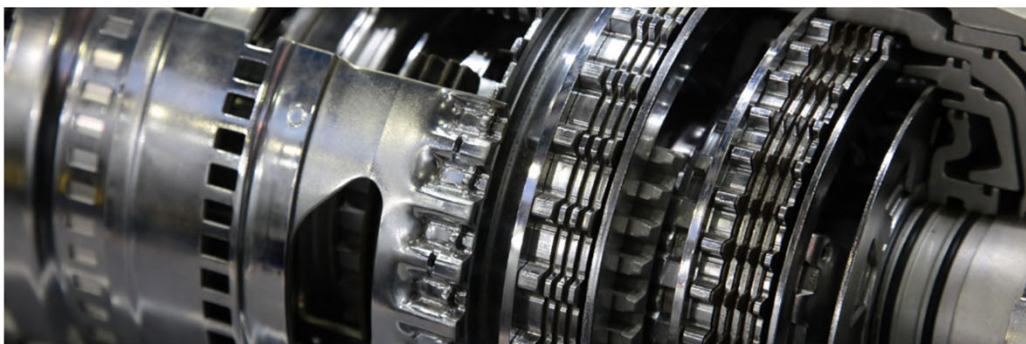
Send your message to Xpertify...

Send

The chatbot has its own site but is also integrated in our dashboard

BOSCH

TbP - Tilburg Plant



6

Uw beschikbare navigatie

0

favorieten

0

to do items

0

berichten

0

formulieren

0

nieuwe documenten

Versie overzicht per doc

Document management dashboard per afdeling

PowerBi Rapporten

Documentatie per Processtap

PS-CT Change Management

QMS @ TbP

HSE @ Bosch-TbP

PFMEA's @ TbP

14Q principles

How it looks like on our dashboard





For more information:

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Thank you!



Bosch Thin Metal Technologies

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