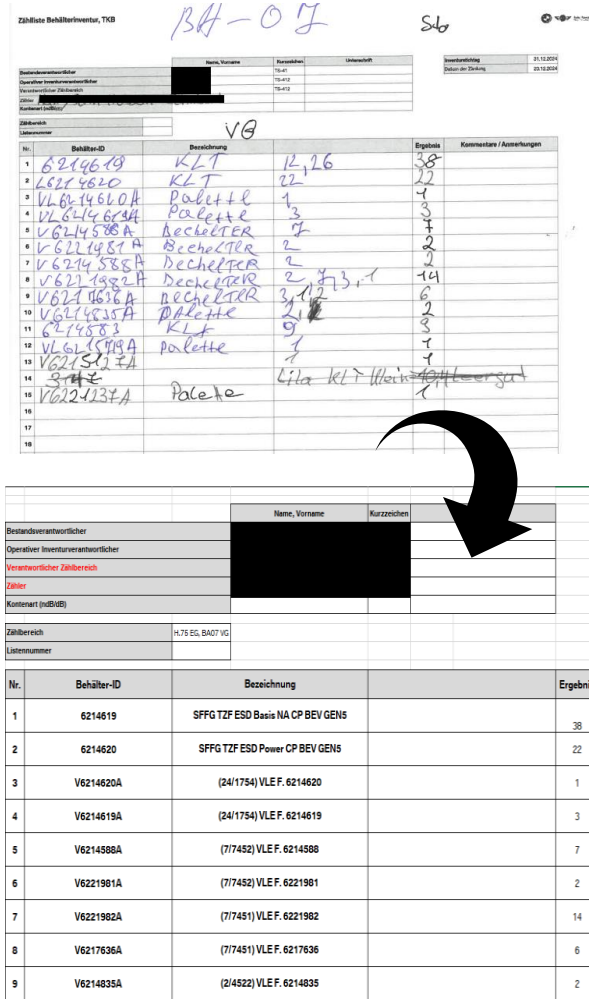
BMW GROUP

USE CASE: DIGITAL AUTOMATION OF CONTAINER INVENTORY RESULTS

PROCESS DESCRIPTION OVERVIEW – OBJECTIVES & CURRENT STATUS

TS-412

USE CASE: DIGITAL AUTOMATION OF CONTAINER INVENTORY RESULTS



Zählliste Behälterinventur, TKB

Nr.	Behälter-ID	Bezeichnung		Ergebnis	Kommentare / Anmerkungen
1	6214619	KLT	12,26	38	
2	6214620	KLT	22	22	
3	V6214620A	Palette	1	1	
4	V6214619A	Palette	3	3	
5	V6214588A	Deckelter	7	7	
6	V6221981A	Deckelter	2	2	
7	V6221982A	Deckelter	2	2	
8	V6217636A	Deckelter	2	14	
9	V6214835A	Deckelter	3,12	6	
10	V6214835A	Palette	2	2	
11	6214583	KLT	9	3	
12	V6214579A	Palette	1	1	
13	V6214572A			1	
14			Lila KLT Weiß leergut		
15	V6214737A	Palette		1	

	Name, Vorname	Kurzzeichen
Bestandsverantwortlicher		
Operativer Inventurverantwortlicher		
Verantwortlicher Zählbereich		
Zähler		
Kontenart (ndB/dB)		

Zählbereich	H.75 EG, BAOT VG
Listennummer	

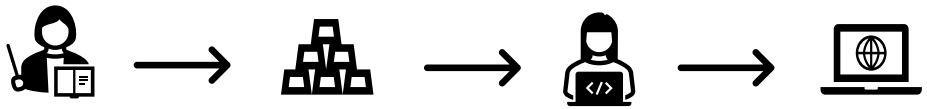
Nr.	Behälter-ID	Bezeichnung		Ergebni
1	6214619	SFFG TZF ESD Basis NA CP BEV GEN5		38
2	6214620	SFFG TZF ESD Power CP BEV GEN5		22
3	V6214620A	(24/1754) VLE F. 6214620		1
4	V6214619A	(24/1754) VLE F. 6214619		3
5	V6214588A	(7/7452) VLE F. 6214588		7
6	V6221981A	(7/7452) VLE F. 6221981		2
7	V6221982A	(7/7451) VLE F. 6221982		14
8	V6217636A	(7/7451) VLE F. 6217636		6
9	V6214835A	(2/4522) VLE F. 6214835		2

- **Motivation**: 1) Error avoidance through typing/reading errors -> Improved inventory results. 2) Cost and resource savings (work materials, working time for counters and inventory staff, replenishment of containers)
- **Goal**: The container are immediately digitally recorded correctly during the count, reconciled, and transferred to Excel. The manual counting and typing effort will be eliminated.
- **Approach**: Plant 2.2 -> Can be expanded to all BMW plants for the inventory as best practice
- **Distribution of Activities**: 75% development and programming, 25% design of the user experience)
- **Technical requirements:** Linking of PowerApp or similar application with Excel and possibly Sharepoint
- **Candidate profile**: Anyone who can program well and has skills in linking PowerApp or a similar application with Excel and possibly Sharepoint.
- **Contact person**: Anna-Lena Neumaier TS-412, Johannes Ächter TS-412
- **Additional information**: Currently, the count results are manually recorded by hand on paper. These are then typed into an Excel file and manually checked for accuracy there.

PROCESS DESCRIPTION OVERVIEW – CURRENT STATUS & GOAL.

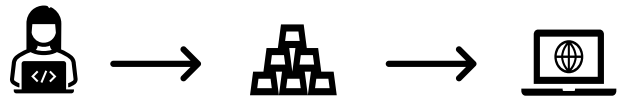
CURRENT STATUS.

- In the current process, the employee/counter enters the area to be counted with a counting template (list) in hand.
- There, all container numbers and their respective quantities of full and empty containers are recorded manually, meaning that the number of each container is entered by hand into this list.
- After the counting is completed, the filled list is manually checked by the inventory managers for any errors. Subsequently, the counting list is "digitized." This means that the counting results from the manual list are summed up in the same format in Excel for each item and then transcribed



GOAL.

- The employee goes to the area where the containers need to be counted with a digital device (e.g., smartphone, tablet, etc.).
- On the device, there is already a link to all containers that are in circulation in plant 02.20 / BMW in total, so only the quantity needs to be entered. At the end of the list, there is a free field where containers that are not on the list can be added if necessary.
- After completing the count, the counting employee saves the list, which is then automatically stored in a folder within the system landscape or transferred to the container controller.



In summary: Containers should be digitally recorded and captured directly during the counting process, without any errors occurring. The manual counting should be replaced by digital counting. This will eliminate reading errors and typos that lead to incorrect bookings.

TECHNISCHE ANFORDERUNGEN / MÖGLICHKEITEN.

PROPOSAL 1 FOR THE IMPLEMENTATION OF THE USE CASE IN THE INNOVATION CHALLENGE:

- Database with all VLEs, GLTs, and all individual components.
- Search function in the database based on VLE or GLT.
- Input of the VLE / GLT / individual component on the smartphone (possibly with a photo application based on the L-number).
- The possible VLE pops up and shows how the VLE should be structured if it is physically okay and matches > input quantity and confirm. If it is not physically okay (e.g., 1 incorrect KLT), there should be an option to expand the VLE, allowing the predefined quantities to be modified and a new LG number to be added (for example, the incorrect KLT).

PROPOSAL 2 FOR THE IMPLEMENTATION OF THE USE CASE IN THE INNOVATION CHALLENGE:

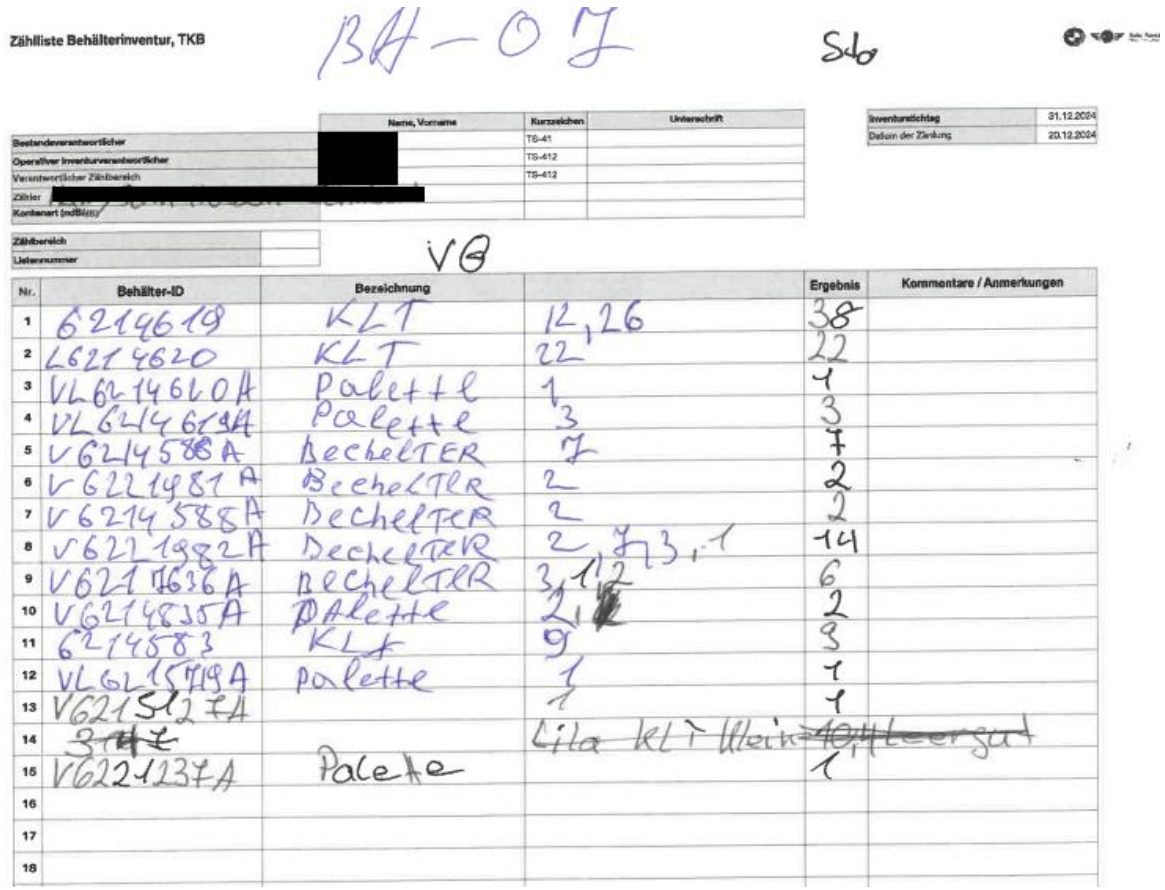
- If not possible, Proposal 2 -> Image to Text (manual counting list -> automatic digital capture)

POSSIBLE TECHNICAL APPLICATIONS:

- Excel, PowerApp, Angular-Framework
- Ggf. Sharepoint, Phyton, KI-Models, Java
- Etc...

PRACTICAL EXAMPLE CURRENT: COUNTING LISTS.

Manual Counting List (Picture 1)



Zählliste Behälterinventur, TKB

BH – 07

Sb

	Name, Vorname	Kurzzeichen	Unterschrift
Bestandsverantwortlicher	[redacted]	TS-41	
Operativer Inventurverantwortlicher		TS-412	
Verantwortlicher Zählbereich		TS-412	
Zähler			
Kontenart (ndB/dB)			

Inventurstichtag	31.12.2024
Datum der Zählung	29.12.2024

Zählbereich	VG
Listennummer	

Nr.	Behälter-ID	Bezeichnung		Ergebnis	Kommentare / Anmerkungen
1	6214619	KLT	12,26	38	
2	L6214620	KLT	22	22	
3	VL6214620A	Palette	1	1	
4	VL6214619A	Palette	3	3	
5	V6214588A	BECHELTER	7	7	
6	V6221981A	BECHELTER	2	2	
7	V6214588A	BECHELTER	2	2	
8	V6221982A	BECHELTER	2	14	
9	V6217636A	BECHELTER	3,12	6	
10	V6214835A	PALETTE	2	2	
11	6214583	KLT	9	9	
12	VL6215719A	palette	1	1	
13	V6215127A		1	1	
14	~~3147~~		Lila kl ~~Klein~~ ~~Leergut~~		
15	V6221237A	Palette		1	
16					
17					
18					

Transcribed Counting List (Picture 2)

	Name, Vorname	Kurzzeichen	Unterschrift
Bestandsverantwortlicher	[redacted]		
Operativer Inventurverantwortlicher			
Verantwortlicher Zählbereich			
Zähler			
Kontenart (ndB/dB)			

Zählbereich	H.75 EG, BA07 VG
Listennummer	

Nr.	Behälter-ID	Bezeichnung		Ergebni
1	6214619	SFFG TZF ESD Basis NA CP BEV GEN5		38
2	6214620	SFFG TZF ESD Power CP BEV GEN5		22
3	V6214620A	(24/1754) VLE F. 6214620		1
4	V6214619A	(24/1754) VLE F. 6214619		3
5	V6214588A	(7/7452) VLE F. 6214588		7
6	V6221981A	(7/7452) VLE F. 6221981		2
7	V6221982A	(7/7451) VLE F. 6221982		14
8	V6217636A	(7/7451) VLE F. 6217636		6
9	V6214835A	(2/4522) VLE F. 6214835		2

CONTAINER PICTURES.