5S and Kaizen project presentation Q4 2025

Autmotive department lines balancing and increase productivity

Leader:	**Viktor Ivanov**
Team members:	**Viktor Ivanov – Planning Leader** **Hristo Ninov – Capacity Specialist** **Viktoria Lalinska – Quality Engineer** **Tsvetozar Ivanov – Product Engineer**
Project coach:	**Stoyan Neshevski**
Champion:	**Majed Majed**
Field of activity:	**Automotive department**
Location / Factory:	**APS**
Completion date:	**12.2025**

1. Problem selection

High level definition of the problem:

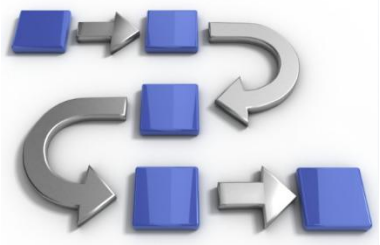
- **Low overall productivity caused by fragmented process flow**
- **Multiple handovers between separated operations**
- **Limited real-time visibility of deviations during the shift**

Conection to the strategy plan:

- **Direct contribution to:**
  - **Productivity improvement**
  - **Stable output**
  - **Better utilization of existing resources**

Project scope:

- **Focused on the end-to-end production flow of SS205**
- **Included all operations**
  - **Soldering**
  - **Mechanical assembly**
  - **Test**
  - **Roller assembly**
  - **Visual control**



2. Target setting

Trend analysis:

The analysis focused on:

- **Output stability per shift**
- **Capacity balance between operations**
- **Late detection of deviations (end-of-shift)**

Target:

Target Definition

Based on real available working time and existing resources.

Direct impact on productivity, stability and capacity utilization.

KPI	UNIT	BASELINE	TARGET	CURRENT STATE
Output per workstation	Units / shift	624	700	724
5S audit score – Automotive	%	67%	≥88%	92%
PERIOD		**2025**	**Sept-25**	**Dec-25**

3. Team building

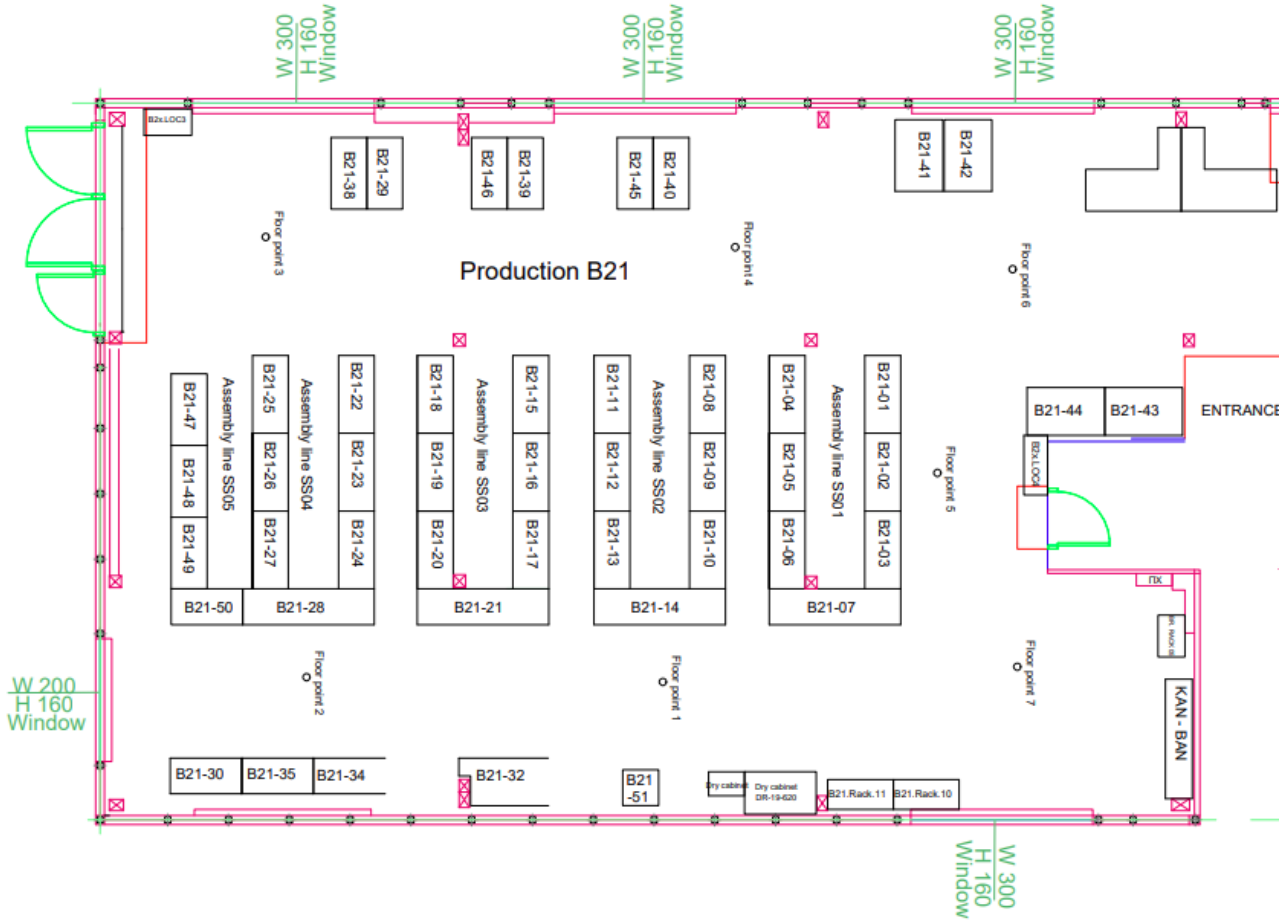
The project was developed and implemented by a cross-functional team with clear roles and responsibilities:

- **Viktor Ivanov – Planning Leader**
- **Hristo Ninov – Capacity Specialist**
- **Viktoria Lalinska – Quality Engineer**
- **Tsvetozar Ivanov – Product Engineer**
- **Majed Majed – Plant Manager**

Meeting dates:

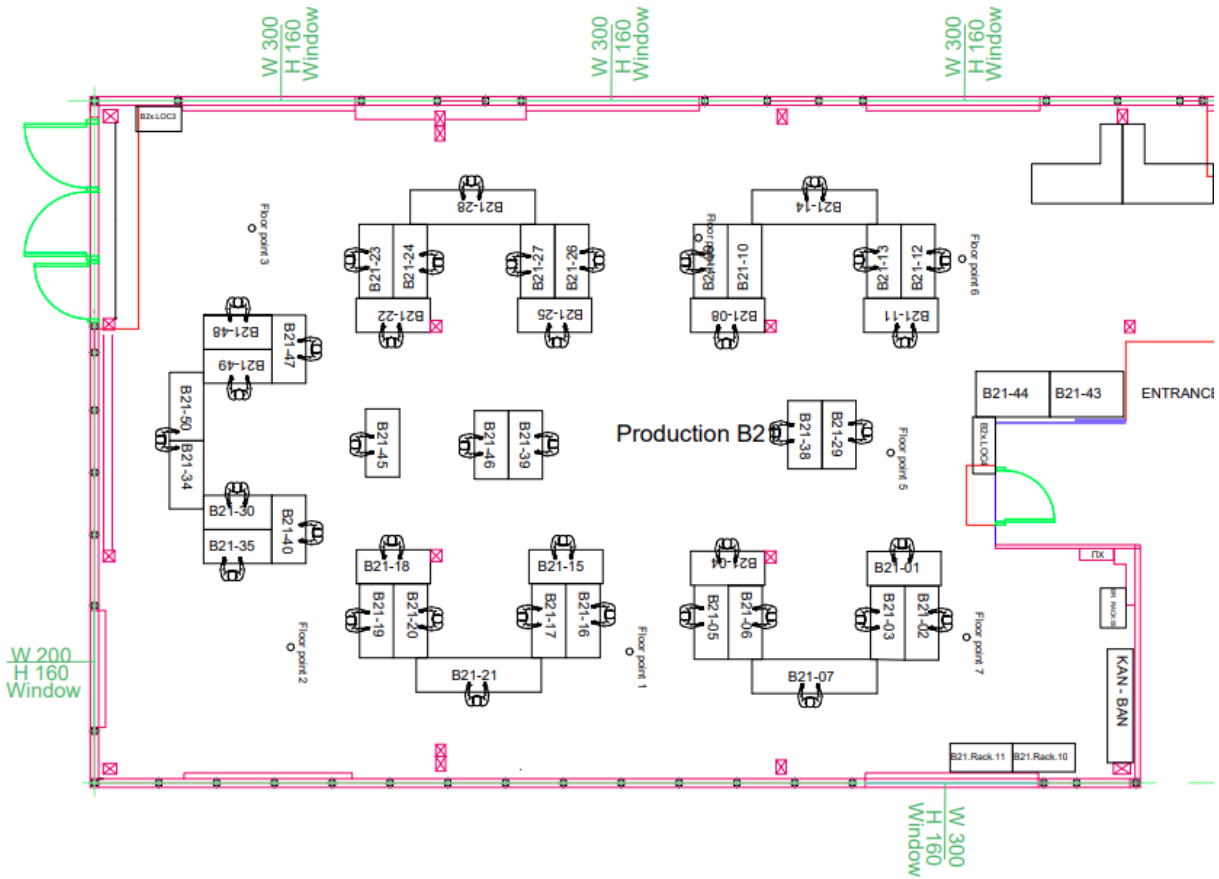
Every Thursday

4. Current State Layout – Functional Organization (Before Q4)



- ✓ **Functional layout with separated operations**
- ✓ **Multiple handovers and internal transport**
- ✓ **Local targets instead of flow-based control**
- ✓ **Limited real-time visibility of the process**

4. Process Layout – Flow-Oriented Organization (After Q4)



- Process-oriented layout
- Reduced handovers and internal transport
- Consolidated mechanical assembly flow
- Balanced workloads between operations
- Improved visibility and control

5. Project planning and execution aligned to calendar weeks

No	Projects steps	W40	W41	W42	W43	W44	W45	W46	W47	W48	W49	W50	W51
1	Problem selection & scope definition												
2	Target setting (SMART & KPI definition)												
3	Team building & role alignment												
4	Current state analysis (flow & layout)												
5	Project planning												
6	Root cause analysis (5 Whys)												
7	Implementation of solutions												
8	Target–result control												
9	Standardization												
10	Deployment												
11	5S stabilization												

6. Root cause analysis

Root Cause Analysis Approach

To identify the true systemic cause of the problem, a 5 Whys analysis was applied.

This approach was selected because:

- **The issue was process-related, not product- or machine-specific.**
- **The problem spanned multiple operations and interfaces, not a single workstation.**

What is the problem?
Unstable hourly output on SS205 and late detection of production deviations, mainly visible at the end of the shift.

Because

Why?
Because production deviations were not detected and managed in real time, but only after accumulation.

Because

Why?
Because there was no hourly flow-based performance control across the entire line.

Because

Why?
Because production targets were defined locally per operation, not as an end-to-end process flow target.

Because

Why?
Because the layout and management logic were functionally organized rather than flow-oriented.

Because

Why?
Because flow-based management standards and hourly performance control were not defined, visualized, or owned at process level.

Root Cause:
Lack of defined and owned flow-based production management standards with hourly control and clear end-to-end ownership of the SS205 process.

7. Implementation of solution

Action plan						
No	Cause	Countermeasure	Responsible	Timing	Comment	Status
1	No flow-based control	Introduced hourly flow-based output targets across SS205	Planning / Line Leaders	W44–W45	Aligned targets end-to-end	Completed
2	Late deviation detection	Implemented hourly performance tracking & escalation rules	Production / Quality	W45	Deviations visible within the hour	Completed
3	Fragmented layout	Reorganized mechanical assembly according to process sequence	Engineering / Production	W45–W46	Reduced handovers & transport	Completed
4	Lack of ownership	Defined end-to-end process ownership for SS205	Plant Management	W46	Clear responsibility assigned	Completed
5	Low workplace stability	Applied 5S stabilization on critical workstations	Team Leaders	W46–W51	Sustained workplace standards	Completed

8. Target- result control

Executive summary:

The implemented Kaizen actions achieved stable hourly output, faster deviation detection, and significantly reduced end-of-shift backlog.

The integrated KPI confirms a controlled, predictable, and flow-oriented SS205 production process.

Change in performance metrics:

New KPI implemented

KPI	UNIT	BASELINE	TARGET	CURRENT STATE
Missed hourly targets	Units	6	≤1	0
PERIOD		2025	Sept-25	Dec-25

The integrated KPI confirms that the implemented countermeasures resulted in a stable, predictable, and flow-controlled SS205 production process.

Annual production volume: 1,000,000 printers

Released capacity across all operations:

3.36 FTE (Full-Time Equivalent)
Annual financial equivalent: ≈

58,000 BGN / year

9. Standardization

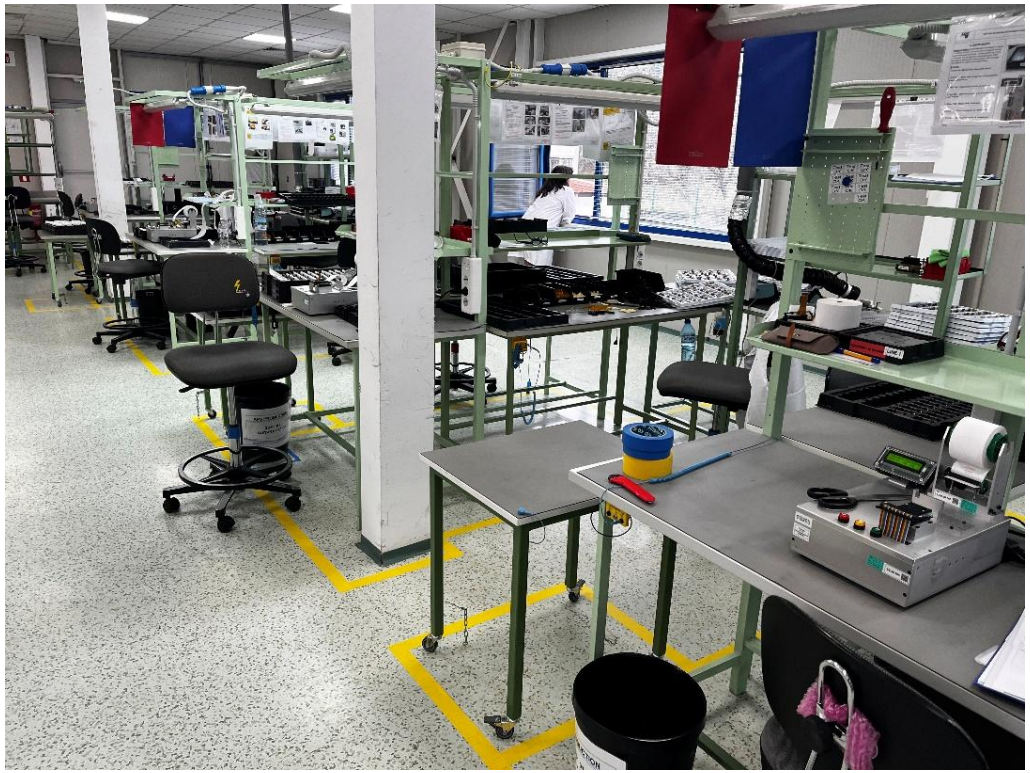
Purpose of standardization

- Standardization was implemented to ensure that the achieved improvements are sustained, repeatable, and independent of individual performance.
- Implemented standards in Standard Work Instructions (SWI)
- Clear handover points between operations
- Hourly performance control standard
- 5S and workplace stability standards
- Standardized workstation layout

11. 5 S

Before

After



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Before

After

11. 5 S

Before

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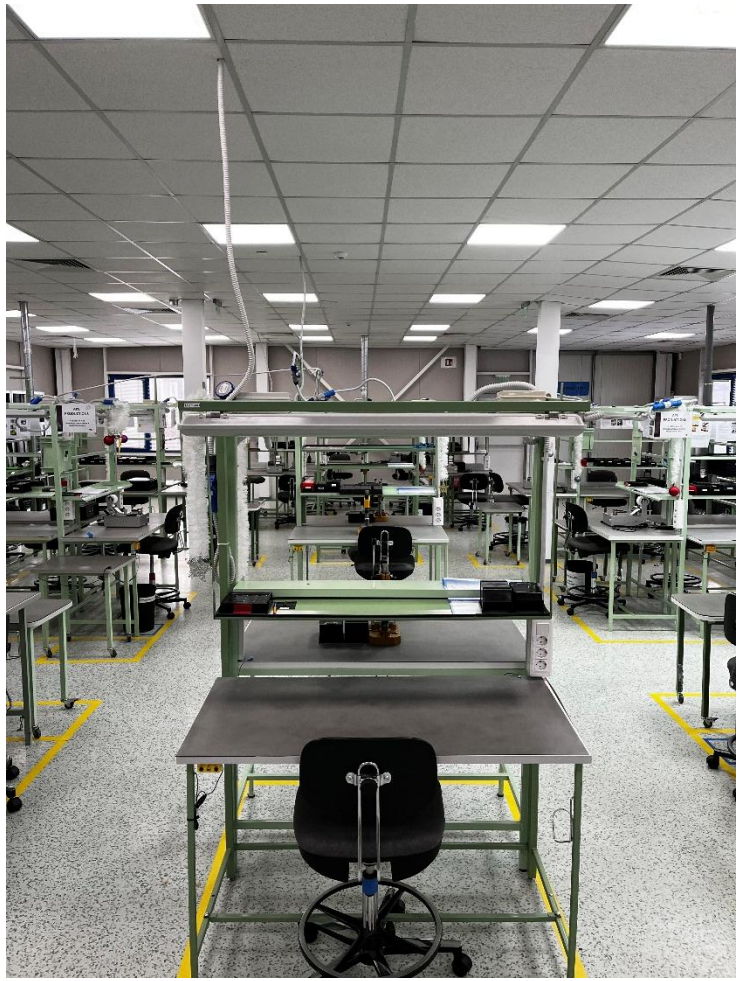

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