skillflow

Bring process reliability to your manual assembly steps

skillflow is an intelligent sensor-equipped wearable for digitizing manual assembly steps that no other system is able to digitize. It enables you to bring process reliability and quality assurance to your manual assembly stations and, therefore, to benefit from transparency in your entire production - not only in your automated workstations. Costs due to manufacturing errors significantly decrease, while process reliability and customer satisfaction increase.

www.skillflow.ai
089 45245750

Contact us at
marketing@tacterion.com
or via the QR code

TX-1: The name stands for the first skillflow generation

skillflow is relevant for any production plant with manual assembly steps, especially in the manufacturing of rubber and plastic components, electrical equipment and automotive parts.

What can skillflow do?

skillflow supports your workers in the execution of various manual work steps, such as:

End-of-line inspection/counting

Assembly with hand-held power tools

Plug connection

Assembly of hoses with hose clamps

Reach out to us about your manual assembly. We would be happy to analyze the potential of skillflow in your production.

How does skillflow work?

The wearable works like an early warning system. While the production worker is performing the manual work step, skillflow analyzes its execution. If it deviates from the learned reference process, the TX-1 immediately notifies the worker and the step can be corrected. Errors due to manual steps no longer occur and therefore do not cause extra costs due to field failures, rework and complaints.

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What does skillflow offer?

skillflow increases your production reliability and quality assurance. Thanks to the additional data gathered, it achieves full transparency throughout the whole production line, thus ensuring your quality standards and customer satisfaction.

Reach full transparency in your production

skillflow highlights the blind spots in your manual production.

Save rework costs

Reduce defect rates and therefore warranty risks.

Increase your output quality

Quality is an important criteria for your buyers. Avoid complaints and ensure higher customer satisfaction.

Take advantage of digitization

Generate important data such as number of pieces, scrap and cycle time in addition to existing real-time data from your machinery. These are available at the push of a button.

Get one step closer to Zero Defect manufacturing

Minimize field failures, increase your efficiency, and protect yourself from brand and image damage.

Implement skillflow during running production

skillflow can be integrated into your working environment quickly, easily, and without disrupting running production.

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02

skillflow TX-1 System Overview

The TX-1 is available in 3 sizes: S, M, and L. The wearable is available for both left and right hands, is non-conductive and can be used in combination with work gloves.

① **Proprietary plyon® flex sensors**

② **Microphone**

③ **LED lights for process feedback**

④ **Working glove**

Our wearable is designed to be worn comfortably throughout the shift.

①

2

3

))) Signal processing unit

Wireless connection
to MES/Cloud

4

Simultaneous analysis of multiple data sources leads to higher process security

Tactile

At the core of skillflow is tacterion's proprietary **plyon® flex sensor**. With a combination of resistive and capacitive measurement principles, plyon® flex enables proximity, touch and force measurement in a single layer.

Acoustic

The characteristic sound of some operations, such as the "CLICK" when a connector is snapped into place, is picked up by the skillflow **microphone**. In noisy environments, our system recognizes which sounds are part of the process and is able to distinguish them from the background noise.

Acceleration

The **TX-1** captures acceleration data. These can be analyzed if relevant by the application. This is particularly advantageous when there are fast, impulse-like movements, such as the recoil of a nail gun.

All the signals available and the associated data allow a variety of further evaluations. Modern Machine Larning methods are used in order to provide the highest added value for specific aplications.

The textile wearable element is designed to be replaceable due to wear and tear in the workplace - the durability of the textile varies depending on the production process and materials used. The evaluation and communication electronics can be removed from the textile wearable and reused with other TX-1s.

with electronics

without electronics

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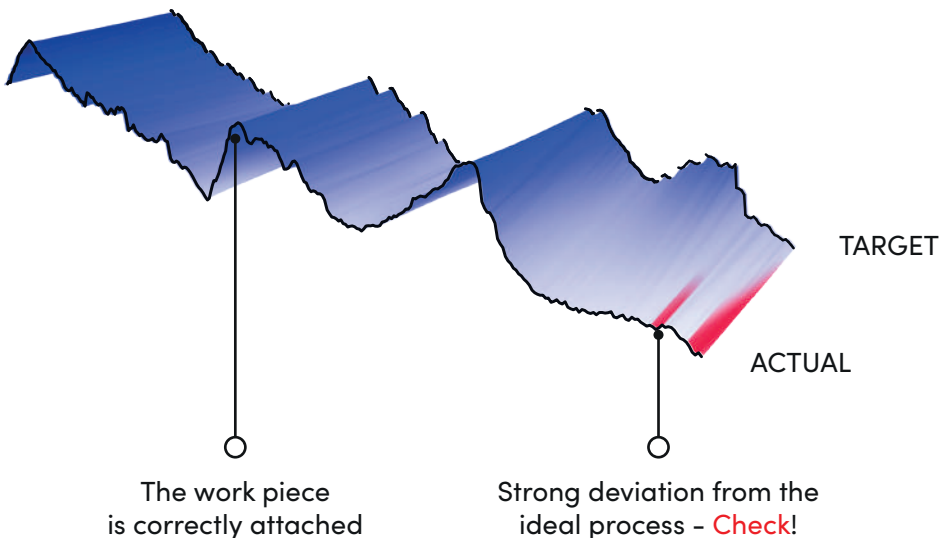or via the QR code

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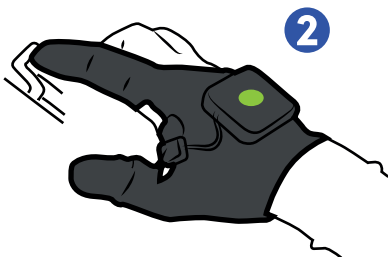
Real-time feedback on the wrist

The model created by tacterion matches the actual data with the learned, optimal process. For this, we visit you at your production and collect the data of the selected process, taking into account all possible data sources that indicate the correct execution of the step: tactile, acoustic and acceleration sources.

Real-time wrist feedback: the system provides immediate notification if interactions deviate from the optimal process.

If desired, a wireless connection to your MES system can also be implemented. Alternatively, the data can be stored in a Cloud system for further analysis.

TARGET

ACTUAL

The work piece
is correctly attached

Strong deviation from the
ideal process – Check!

" Our employees appreciate the additional "safety net" that skillflow provides. TX-1 delivers the assurance that no important work step has been missed out. "

Production Manager

Leading Construction
Tool Manufacturer

" We particularly liked the quick and easy integration of skillflow into our production. And how effortlessly our workers are able to identify and fix mistakes is a game changer. "

Project Manager

large German
automotive OEM

70%

value creation
through manual labor

90%

error reduction
per work step

98%

accuracy achieved
in pilot projects

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skillflow is implemented in five steps

1

Identify:

Our data engineers analyze your entire workflow and identify suitable manual steps.

2

Data acquisition:

Our team visits your manufacturing site to record all data.

3

Data processing:

The collected data is implemented in our Machine Learning Model.

4

Initialization of the devices:

The wearable device is connected to the digital platform and, if required, to your MES.

5

Ongoing operation:

Employees usually start using the device without interrupting ongoing production. skillflow now supports the worker in real time and collects data for further optimization.

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skillflow

a brand and product of tacterion

tacterion was founded in 2015 as a spin-off of the German Aerospace Center. The patented sensor technology plyon® has won market-leading companies as customers, partners and investors. Integrated into a wearable, plyon® highlights blind spots in manual worksteps in industrial environments.

skillflow closes the gap

At least 25% of all industrial processes cannot be automated, and much of this work is not connected to data-based quality assurance. skillflow closes this digitization gap by simultaneously providing the data basis and evaluation of critical manual processes. With skillflow, you achieve similar process reliability and quality assurance at manual workplaces as at automated workplaces. It reduces manufacturing errors and scrap costs and increases your process reliability as well as your customer and employee satisfaction.