

# Nichi-Iko and Fujitsu drive pharmaceutical manufacturing DX with AI

**Joint field trial aims to eliminate product waste, accelerate training of manufacturing engineers**

**Toyama and Kawasaki, Japan, December 5, 2024** - Nichi-Iko Pharmaceutical Co., Ltd. and Fujitsu Limited today announced the ongoing progress of a joint field trial. The initiative aims to aid the detection of omissions in sterile room entry and exit procedures and enhance the training of manufacturing engineers at Nichi-Iko's pharmaceutical manufacturing facility. It leverages Fujitsu's behavioral analysis AI service, "Fujitsu Kozuchi for Vision", and Broadleaf Co., Ltd.'s productivity and business optimization software, "OTRS" and "OTRS+AI."

## Joint field trial outline

### 1. Trial period:

November 19, 2024 – December 20, 2024

### 2. Location:

Nichi-Iko Pharmaceutical Co., Ltd. Gifu Plant (Takayama City, Gifu Prefecture, Japan)

### 3. Details:

- Fujitsu's Fujitsu Kozuchi for Vision AI service, equipped with technology that detects human actions in real-time <sup>(1)</sup>, will be used to analyze video data from cameras at the sterile room entrance. The system will verify whether standardized procedures are followed during entry and exit and detect omissions in real-time. The partners are considering various notification methods, including alarms, flashing lights, and smartphone alerts. By ensuring adherence to correct procedures, the goal is to eliminate product waste from non-standard operations and ensure stability in aseptic drug manufacturing.

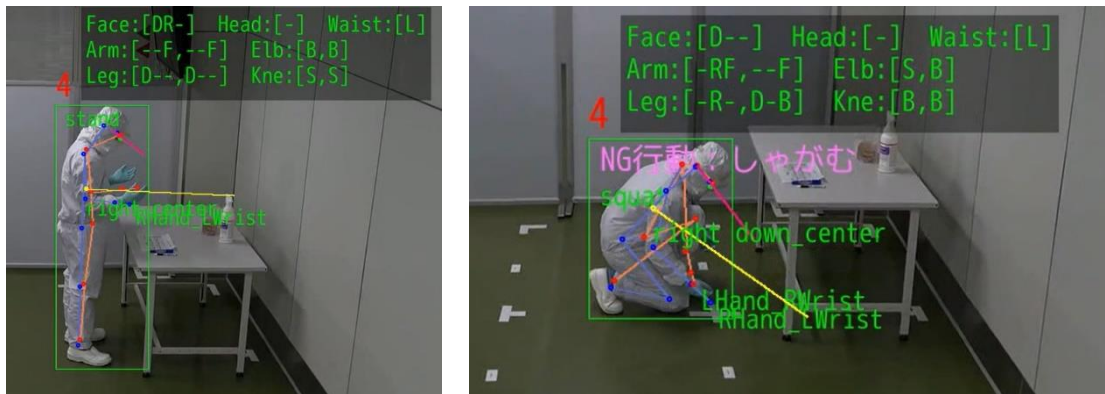


Figure: Detection of normal behavior (left) and problematic squatting (right)

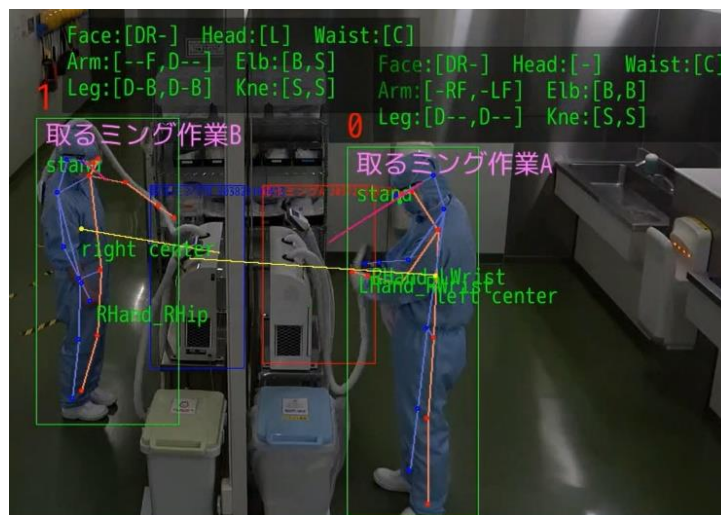


Figure: Detection of the action of dust removal work

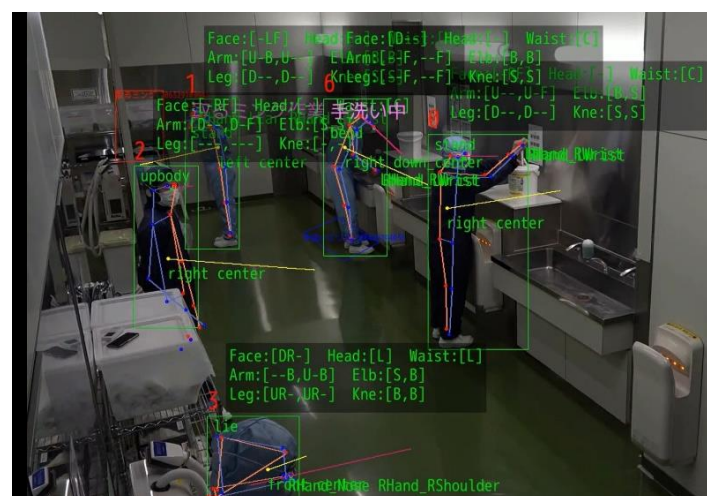


Figure: Detection of hand washing by multiple people at the same time

- To address the ongoing employee shortage in the pharmaceutical sector and accelerate the training of manufacturing engineers, Broadleaf solutions OTRS and OTRS+AI, the latter of which incorporates Fujitsu's work segmentation AI technology <sup>(2)</sup>, will be implemented. Video data of experienced engineers carrying out their work will be segmented by individual task and used to train the AI. Next, the AI automatically segments the video data of the novice engineers carrying out their tasks and displays both segmented videos side-by-side for an instructor to use in training. Additionally, a video-based standard operating procedure manual and pre-operation simulations will be created with a view to achieving a 50% reduction in training costs compared to conventional methods.

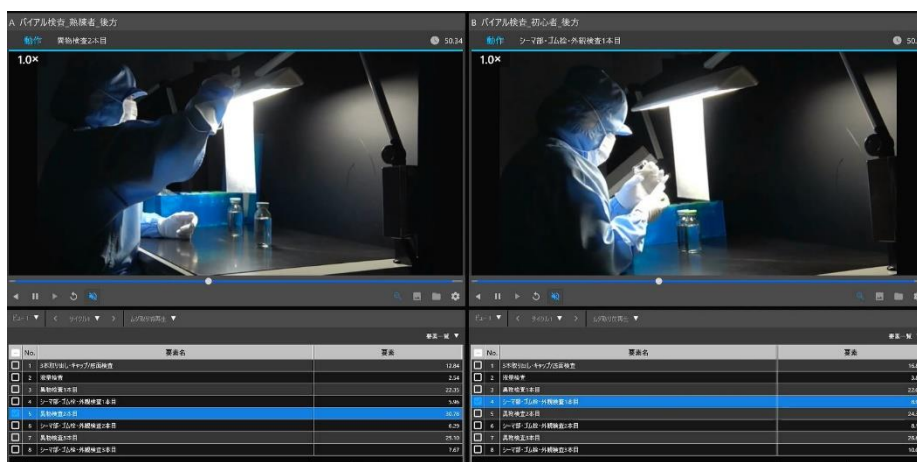


Figure: Motion comparison with parallel display of experienced engineers (left) and novice engineers (right)

### Future plans

Based on the results of this joint field trial, both companies will work towards the full-scale introduction of Fujitsu Kozuchi for Vision, OTRS, and OTRS+AI at the Nichi-Iko Gifu plant by March 2025.

Nichi-Iko will leverage the knowledge gained from this joint field trial to establish the Nichi-Iko Gifu plant as a model smart factory. By replicating this model across all its plants in Japan, Nichi-Iko aims to accelerate DX across its manufacturing and contribute to the stable supply of pharmaceuticals.

Fujitsu will continue to support Nichi-Iko's smart factory initiatives and DX efforts in pharmaceutical manufacturing.

**Note**

[1] Technology that detects human actions in real-time:

Enables real-time detection by accurately identifying and sequencing individual steps within a task, even those difficult to detect (patent pending).

[2] Work segmentation AI technology:

Enables high-precision automatic detection of individual tasks from video content by trained AI.

**Related links:**

- Fujitsu Kozuchi website

<https://www.fujitsu.com/global/services/kozuchi/>

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