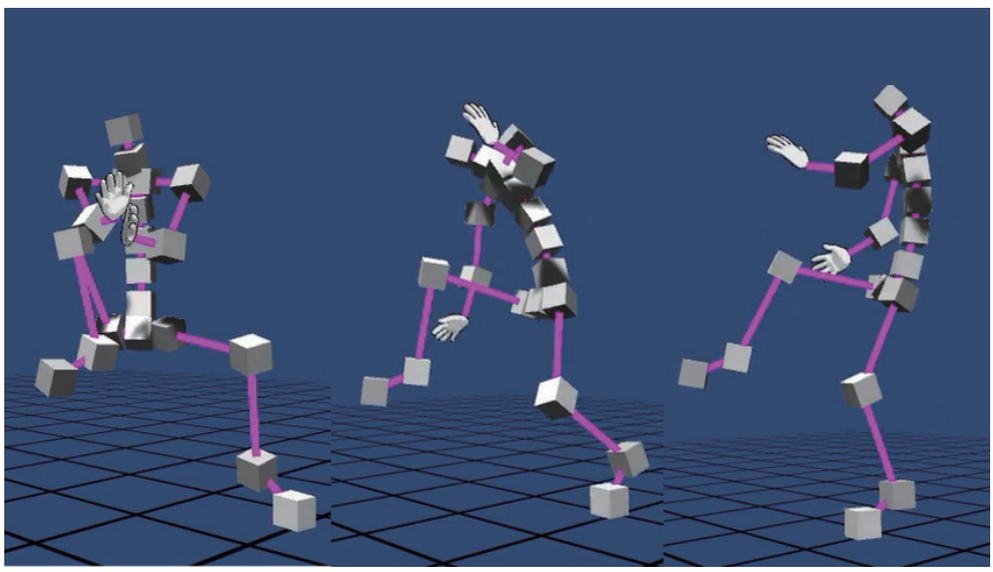
Digitalization of Human Motion with Sensors

mcframe MOTION

MOTION

With motion sensor, workers' movements and postures are converted into three-dimensional data. The analysis and evaluation for work instruction and work load can be completed while ensuring the quality of work is maintained.



BASIC FUNCTIONS

Live View

Movement of three -dimentional body is caputued in real time and the work status is monitored.

3D Model Analysis

The posture and movement can be quantitatively evaluated according to the distances and angles between the body joints of the 3D model.

Flow-line Analysis

Accoording to distance measurement such as hands and walking, and 3D trajectory, flow-line can be grasped quantitativly and visually.

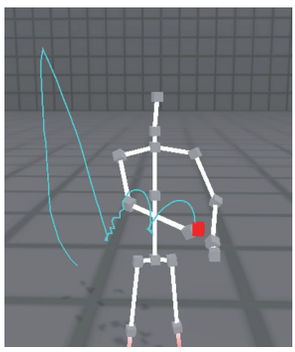
EFFECT

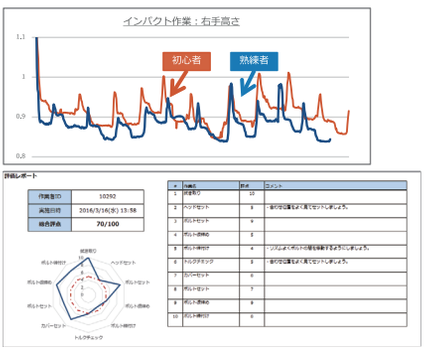
- Generate analytical data such as body 3D model and three-dimensional coordinates with ease.
- Easy to find improvement points by viewing in multiple directions using 3D.
- Objective assessment by measurement data not depending on skills of evaluator.
- Evaluation by new indicators that have never existed or could not be acquired.
- Improve satisfaction by improving explanation with data backed up.

How to Use

Work Instruction

Introduction training on the line, and periodic work diagnosis.

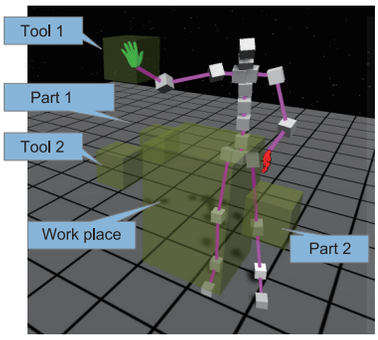




Aside from comparing the differences with experts, it is also possible to evaluate the performances using index values such as interval and number of actions, speed of movement, and distance can be done.
The objective data can lead work instruction accordingly.

Ensuring the Quality of Work

Compliance with work procedures, grasp abnormal behavior, and error-proofing (fail safe).



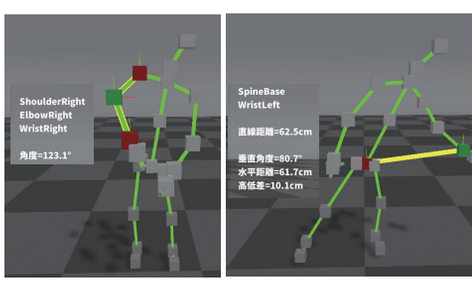
Area	Standard			Actual			Difference (Standard minus Actual)		
	Time	Frequency	Distance	Time	Frequency	Distance	Time	Frequency	Distance
Work place	25.3	5		26.1	6		0.8	1	
Tool 1	2.1	1		2.2	1		0.1	0	
Tool 2	3.4	2		3.3	2		-0.1	0	
Part 1	6.4	2		7.1	2		0.7	0	
Part 2	3.6	1		3.6	2		0.0	1	
Move	17.6	14		22.4	16		4.8	2	
Total	58.4	25	5.5	64.7	29	7.2	6.3	4	1.7

Difference
(Standard minus xActual)

Based on the results (timing, frequency, distance travelled, etc), it is possible to identify abnormal operation and thus, improvements can be suggested .

Work Load

Reduction of work load of waist, shoulder, wrist, etc.



Evaluating posture

Process	Evaluation results
A Process	OK
B Process	NG
C Process	NG
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Exceeding standard data can be judged as risk. Also,the work load is evaluated based on work hours and load level as risk.

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