



RISK ASSESSMENT  
VIRTUAL VERIFICATION  
7 ERGONOMIC ANALYSES  
OPTIMIZED WORKFLOW  
INCREASED EFFICIENCY  
SOFTWARE AS A SERVICE  
INDUSTRY 4.0

## **SUPPORTING OCRA EVALUATION BY VIVELAB ERGO**

VIRTUAL ERGONOMIC VERIFICATION  
FOR THE MANUFACTURING SECTOR

# VISION

We believe that leading companies need the most innovative technologies to improve today's workplaces and increase efficiency while focusing on the well-being of employees.

Our mission is to provide fast and accurate 3D virtual ergonomic simulation, analysis and planning for wide range of companies to create optimal working environments and workflows for health, efficiency and competitiveness.

**WORK BETTER, FASTER, HEALTHIER!**

# VIRTUAL ERGONOMIC VERIFICATION

## GUARANTEES THE ERGONOMIC COMPLIANCE OF WORKSTATIONS

ViveLab is a cloud-based ergonomic simulation software which provides fast and accurate three-dimensional virtual ergonomic tests, analysis, and planning for a wide range of companies. Thanks to the built-in anthropometric database and seven ergonomic analyses ViveLab Ergo highlights the unnecessary, time-consuming movements, and the health-damaging effects of forced movements caused by incorrect workplace design.

With this software-as-a-service solution is easy to create optimal working environments and workflows for health, efficiency, and competitiveness.



**EVEN IF IN THE DESIGN PHASE WITHOUT A PHYSICAL PROTOTYPE**

# VIVELAB BUILT-IN ANALYSES

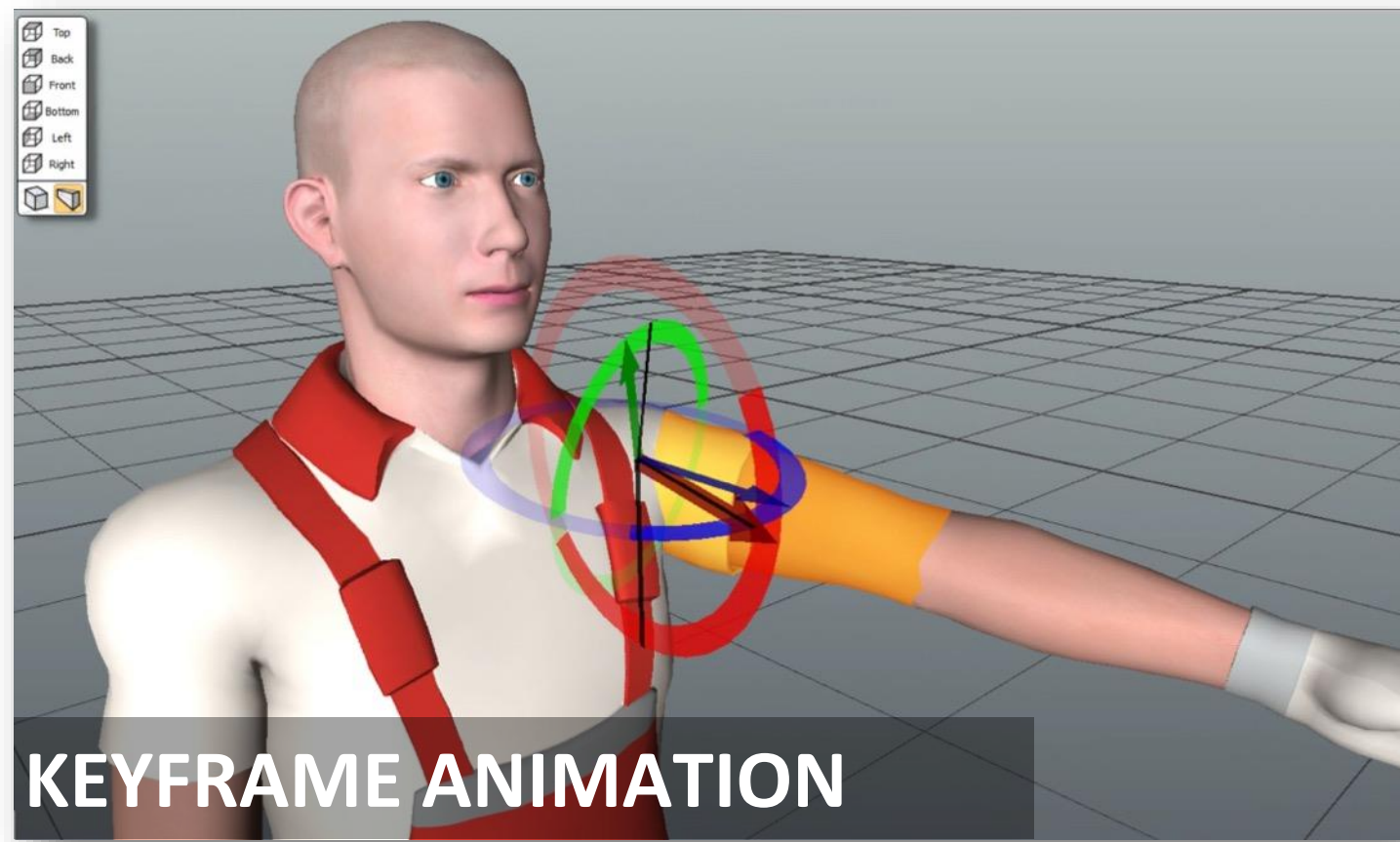
The ViveLab Ergo software has been developed by ergonomics experts, after more than 30 years of professional experience in the fields of software development, human simulation and ergonomics. Compared to traditional ergonomic visual inspection, the software accurately captures motion, which can be replayed from any angle in the 3D environment. The software uses an extensive anthropometric database to realistically model the geometric features of ninety-nine percent of the human population.

The tools of the ergonomic analysis are the seven internationally known and recognized analysis methods that have been implemented in the ViveLab Ergo software. These methods include RULA, OWAS, NASA-OBI and the already standardized body position assessment systems, such as ISO11226 and EN1005-4. Furthermore, the reachability test and the spaghetti diagram are implemented as well.

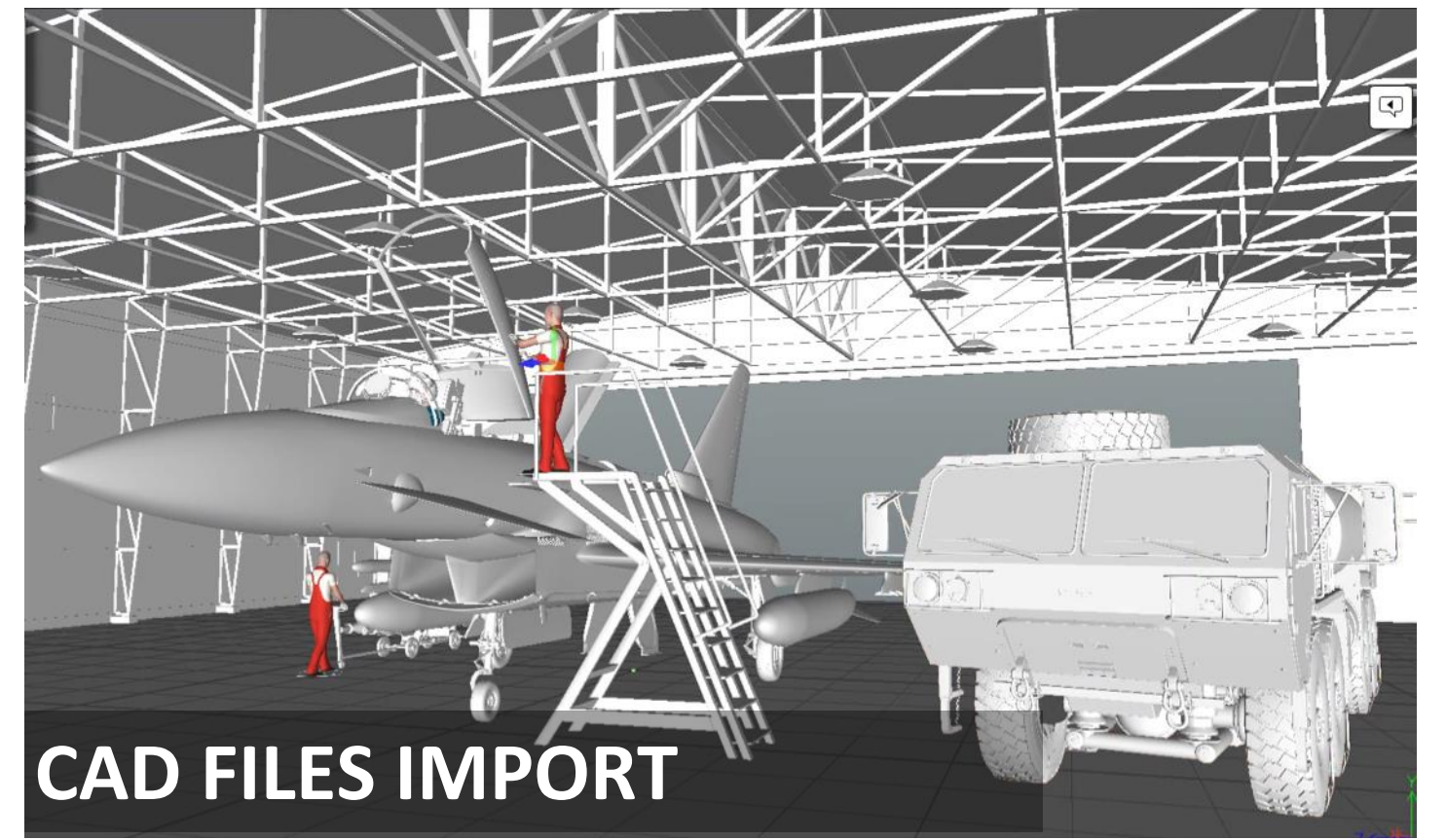
All of the built-in analyses can be saved as clear PDF report. It takes only a few mouse clicks. The report highlights the positions where ergonomic measures have to be taken to improve the quality of the workplace.



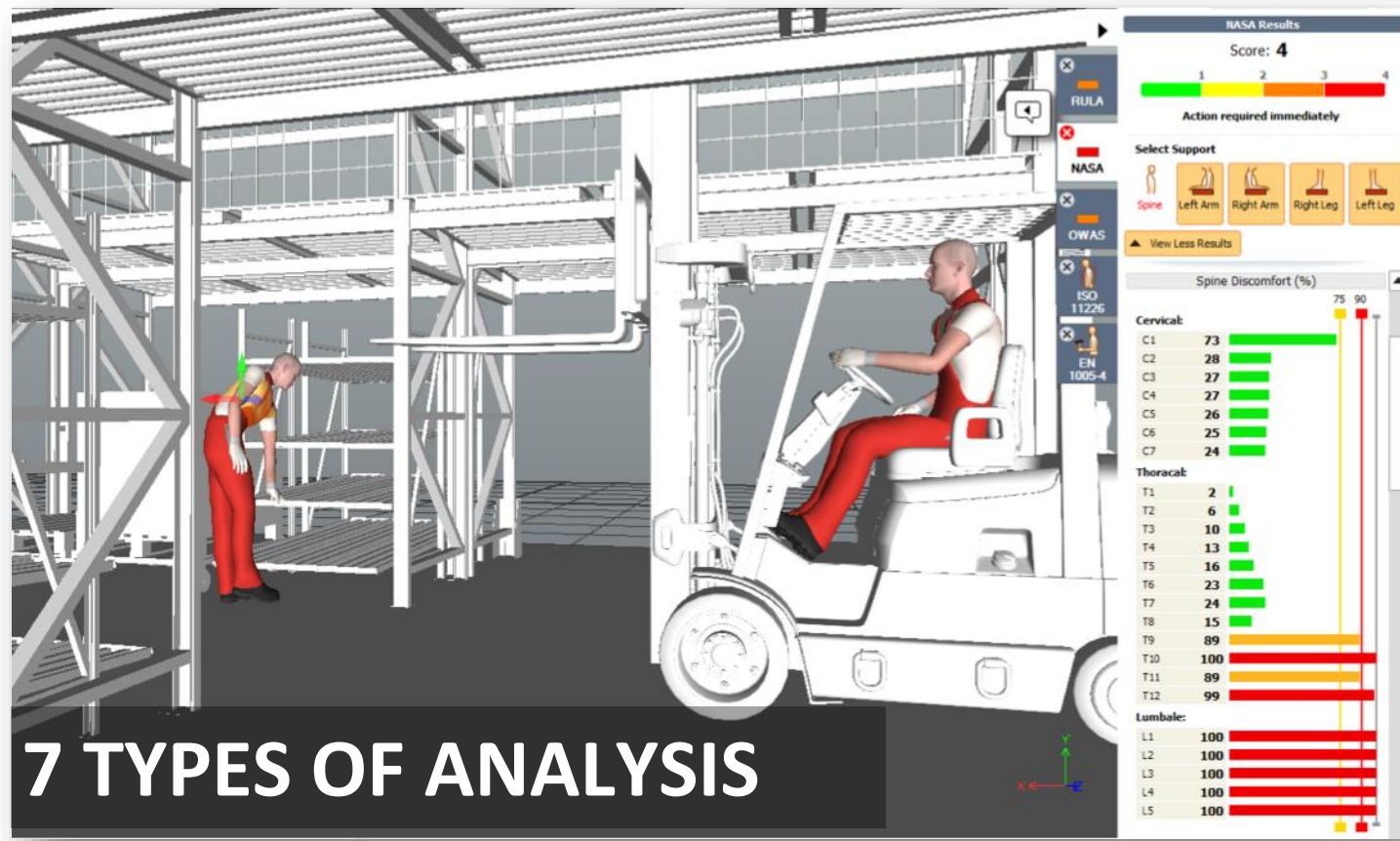
MOTION CAPTURE FILES IMPORT



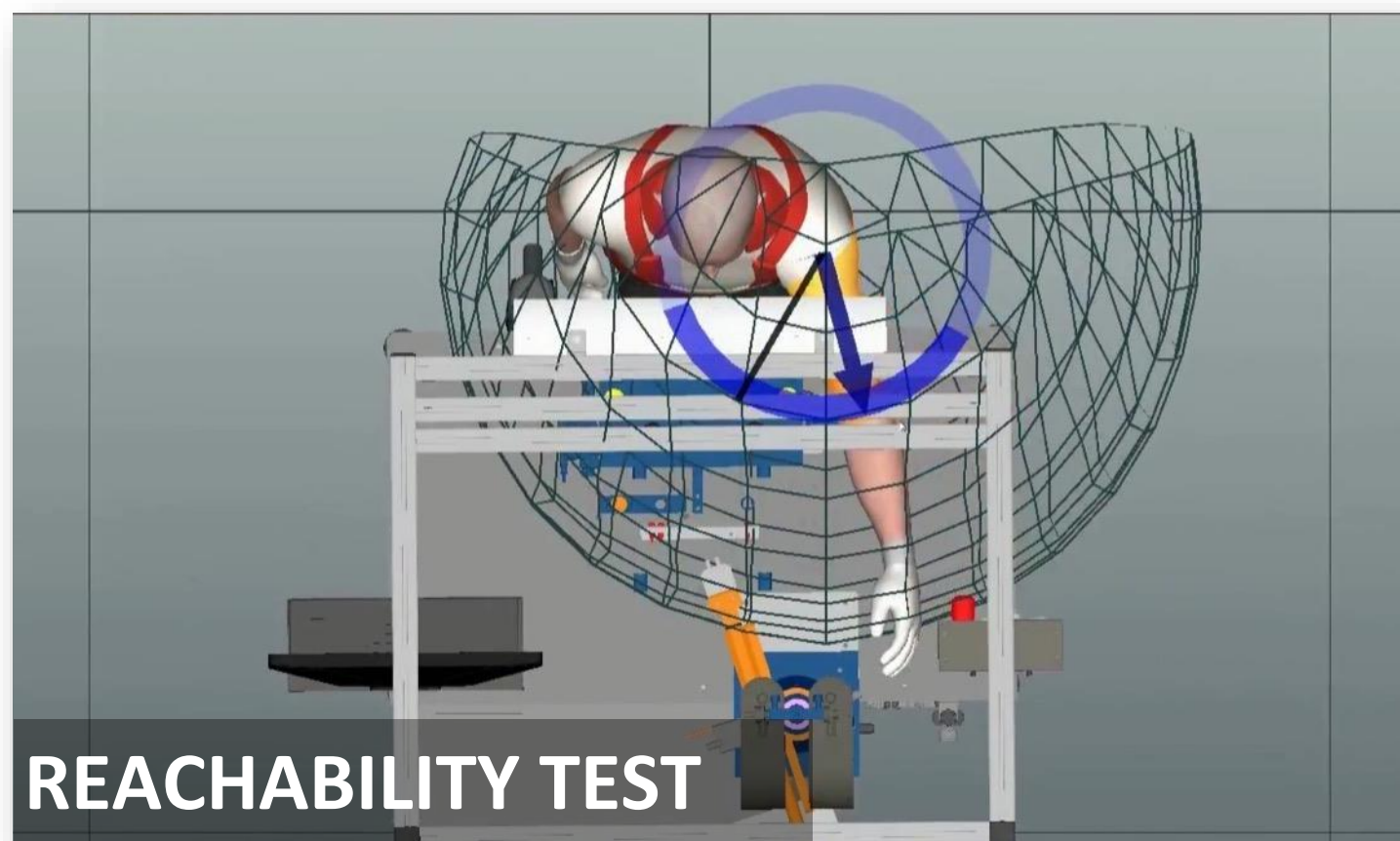
KEYFRAME ANIMATION



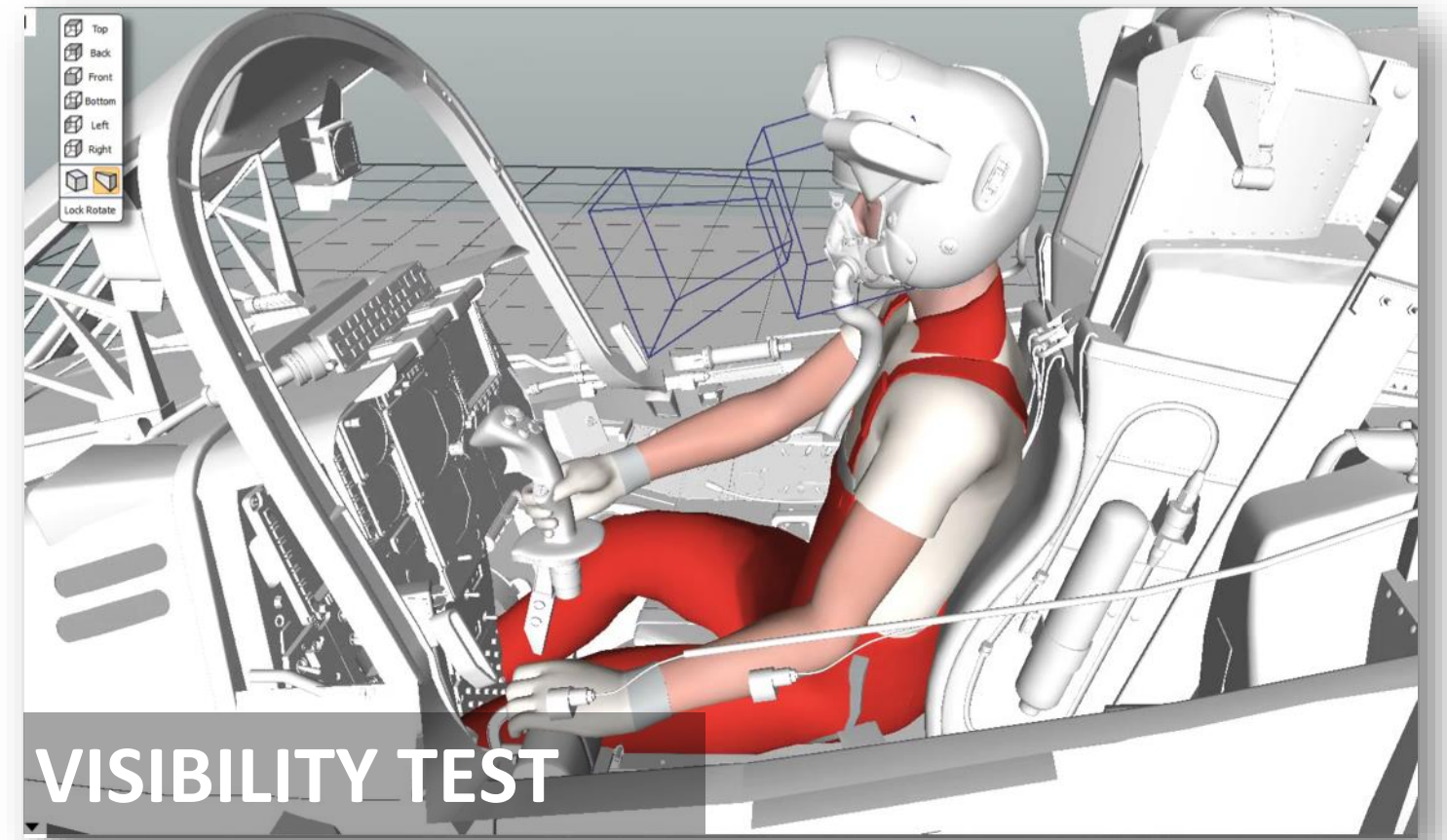
CAD FILES IMPORT



7 TYPES OF ANALYSIS



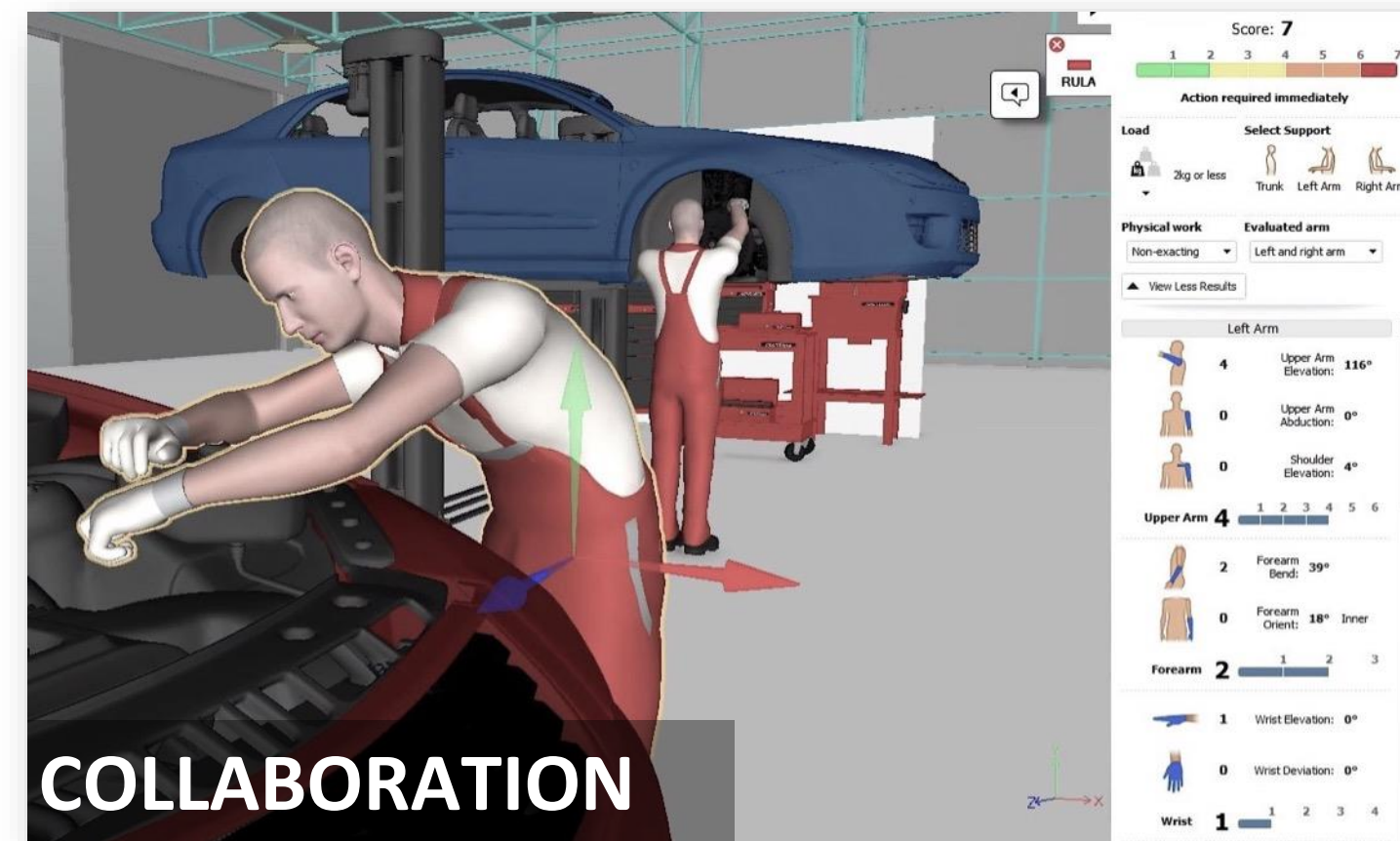
REACHABILITY TEST



VISIBILITY TEST



SPAGHETTI DIAGRAM



COLLABORATION

**RULA analysis detailed results** Human 1

Time: 7s 139ms  
 Load: 2kg or less  
 Physical work: Non-exercising  
 Evaluated arm: Left and right arm  
 Trunk support: No  
 Left arm support: No  
 Right arm support: No  
 Evaluation score: 6

**Further investigation, change soon**

Left Arm		Right Arm	
Upper Arm Elevation: 116°	4	Upper Arm Elevation: 99°	5
Upper Arm Abduction: 0°	0	Upper Arm Abduction: 0°	0
Shoulder Elevation: 4°	0	Shoulder Elevation: 22°	0
Forearm Bend: 99°	2	Forearm Bend: 8°	0
Forearm Orient: 18° Inner	0	Forearm Orientation: 0°	0
Wrist Elevation: 0°	1	Wrist Elevation: 7°	1
Wrist Deviation: 0°	0	Wrist Deviation: 0°	0

ANALYSIS REPORT EXPORT

**ISO11226 evaluation results** Human 1

Start time: 0s  
 End time: 24s 100ms  
 Supports: None

**Not acceptable**

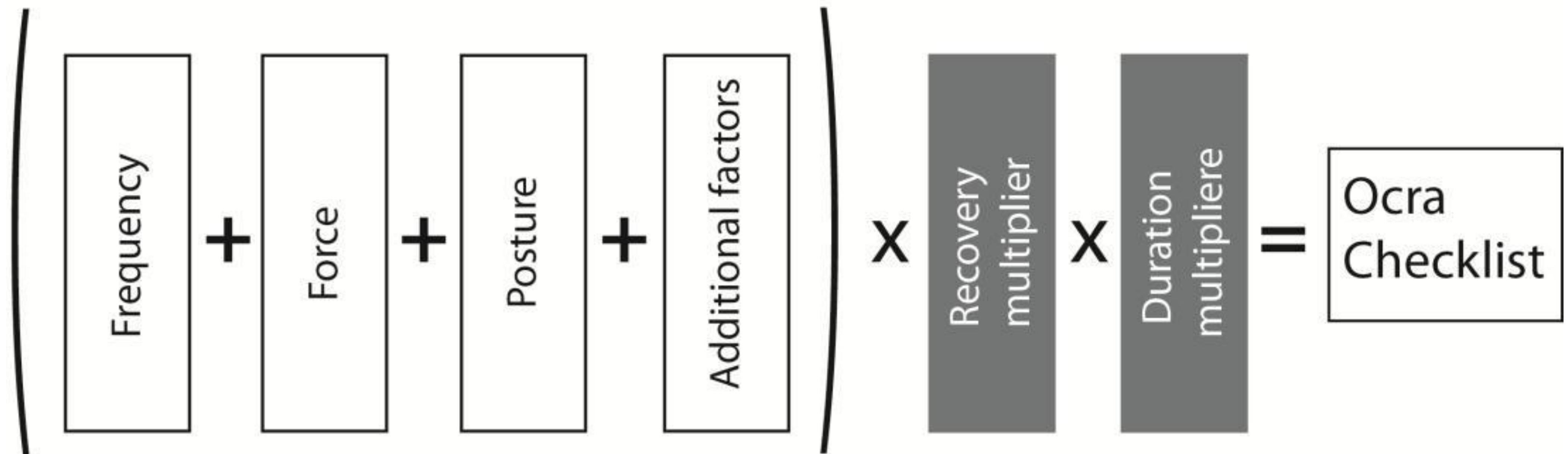
Critical Postures	Average Angle	Starting Time	Holding Time
1 Asymmetric trunk posture (axial rotation) for more than 4s	21°	0s	5s 300ms
2 Neck flexion is >25° for more than 4s	30°	0s	4s 900ms
3 Asymmetric trunk posture (lateral flexion) for more than 4s	15°	3s 900ms	7s 100ms
4 Right upper arm elevation is <-60° for more than 4s	92°	5s 200ms	5s 100ms
5 Right shoulder is raised for more than 4s	59°	5s 300ms	4s 800ms
6 Neck flexion is >25° for more than 4s	33°	5s 500ms	5s 500ms
7 Head inclination is <-60° for more than 4s	89°	5s 700ms	4s 600ms
8 Left wrist radial abduction is <-20° for more than 4s	21°	5s 700ms	4s 100ms
9 Neck flexion is <-25° for more than 4s	34°	11s 200ms	5s 500ms
10 Asymmetric trunk posture (axial rotation) for more than 4s	17°	14s	6s 700ms
11 Asymmetric trunk posture (lateral flexion) for more than 4s	12°	14s 100ms	6s 300ms
12 Left upper arm elevation is <-60° for more than 4s	95°	14s 200ms	6s 600ms
13 Left shoulder is raised for more than 4s	12°	14s 300ms	6s 400ms
14 Asymmetric neck posture (axial rotation) for more than 4s	18°	14s 500ms	6s
15 Trunk inclination is <-60° while the trunk is not supported for more than 4s	64°	15s 100ms	4s 800ms
16 Left elbow extension is <-60° for more than 4s	-12°	15s 600ms	4s 800ms
17 Right upper arm elevation is <-60° for more than 4s	69°	15s 800ms	5s 400ms

# ADVANTAGES OF THE DIGITAL SOLUTION

- ✓ **FAST AND PRECISE PROCESS:** motion measurement and reporting within minutes
- ✓ **RELIABLE AND OBJECTIVE DATA:** The result is independent of the analyst because of the motion measured by sensors and analyzed by software
- ✓ **EASY TO LEARN:** it takes only 2 days to learn the usage of the ViveLab Ergo software and the Xsens Motion capture, even by non-ergonomists
- ✓ **DETAILED PDF REPORT:** detailed, automated documentation in PDF format within a few minutes
- ✓ **CLOUD-BASED TECHNOLOGY:** no IT investment needed, accessible worldwide
- ✓ **COLLABORATIVE:** You can invite and collaborate with other users or our experts from all around the world
- ✓ **SUBSCRIPTION-BASED REVENUE MODEL:** 4 different license packages with monthly pricing

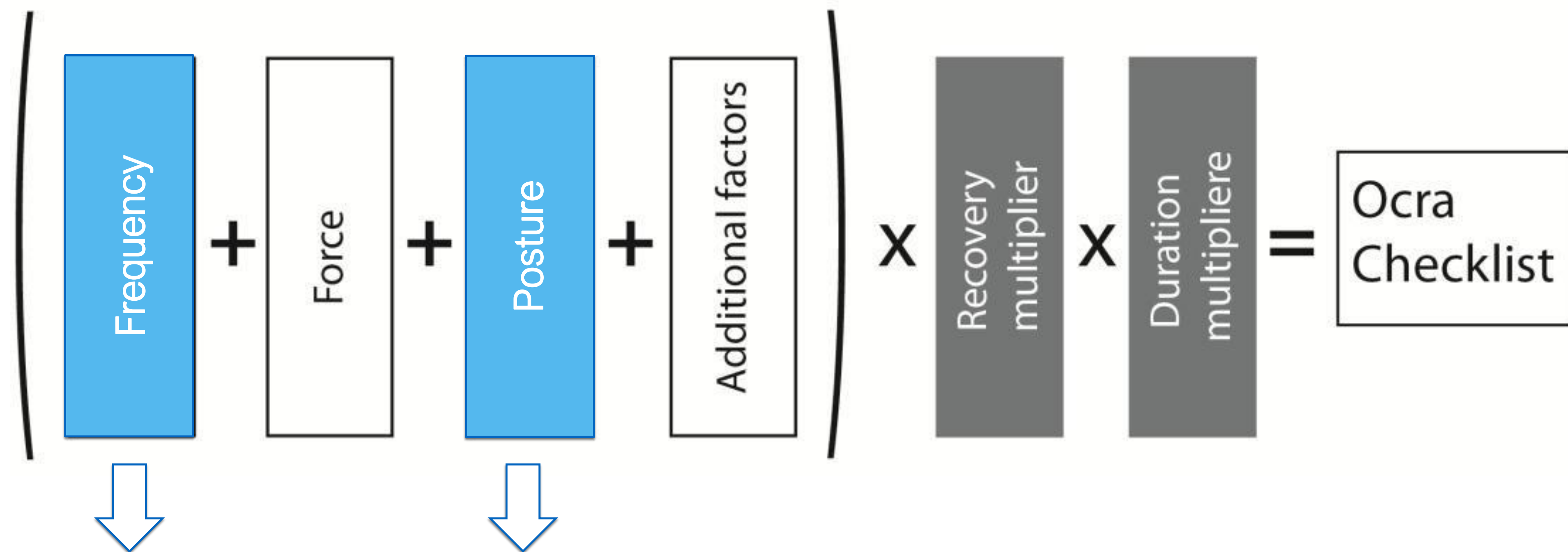
**VIVELAB ERGO HELPS TO FILL  
OCRA CHECKLISTS**

# THE CALCULATION PROCEDURE OF THE OCRA CHECKLIST





# VIVELAB MAKES OCRA CHECKLIST EASIER



VIVELAB provides exact, measured data

# VIVELAB-OCRA WORKFLOW

OBJECTIVE – FAST – PRECISE – EASY TO USE

1

**MEASURE THE MOTION**



Accurate, quick, objective and precise data capture of every detail of movement

2

**IMPORT MOTION FILE**



The ViveLab software analyzes and filters improper movements and forced postures even if cannot be noticed by visual inspection

3

**EXPORT DETAILED REPORT**



It takes only a few mouse clicks to export a detailed report, which highlights improper movements and forced postures

4



**FILL THE OCRA CHECKLIST**

**OCRA**

Use ViveLab report to fill the „FREQUENCY” and the „POSTURE” fields of OCRA checklist easily

# ACCURATE DATA & FAST PROCESS

1 ANALYST – 50 WORKSTATIONS – 2 MIN LONG CYCLE TIME

1	MEASURE THE MOTION		30 MIN / WORKSTATION	➔	<b>PART TIME: 1500 MIN</b>
2	IMPORT MOTION FILE		~ 2,5 MIN / WORKSTATION	➔	<b>PART TIME: 120 MIN</b>
3	EXPORT DETAILED REPORT		~ 2,5 MIN / WORKSTATION	➔	<b>PART TIME: 120 MIN</b>
4	FILL THE OCRA CHECKLIST	<b>OCRA</b>	~ 2,5 MIN / WORKSTATION	➔	<b>PART TIME: 120 MIN</b>
Σ	<b>TOTAL OCRA ASSESSMENT</b>		~ 37,5 MIN / WORKSTATION	➔	<b>TOTAL TIME: ~ 31 HOURS</b>

## CONCLUSION:

The whole assessment of the 50 workstations takes just 31 hours if just one analyst works on the project. Thanks to the user-friendly interface it takes only 2 days to learn the software and hardware usage. Therefore, it is possible to multiply the analyst team and dramatically reduce the execution time. The task can be seamlessly scaled up to 50,000 workstations.

# HOW TO START?



Learn and do everything on your own



Upload data and let our ergonomists analyze it



Contract us and we do everything for you on-site

YOU CAN USE VIVELAB ERGO AT THREE DIFFERENT LEVELS AT YOUR CHOICE

LEARN MORE



Sign up for a free trial:  
**VIVELAB.CLOUD**

