Our company hopes your healthy and happy life.

We are a startup that
promotes human health
and happiness **using bio-signal processing techniques.**

We are aiming to build big data based on bio-signals and contribute to enriching our life.

Health and happiness System

www.hhskorea.com

New style catalog solution that is clean like printing and free like online!!

Publicity Platform Service that is newly created with **KICOX** Korea Industrial Complex Corporation

New Multi Digital Book

This book contains videos, links and CG.

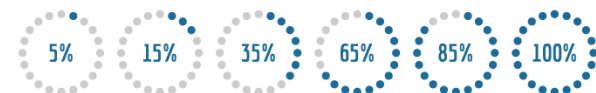Please refer to the following to check the optimized NewMulbook.

Download ADOBE READER to use more optimized NewMulbook.

Click on logo to go directly to the download site.
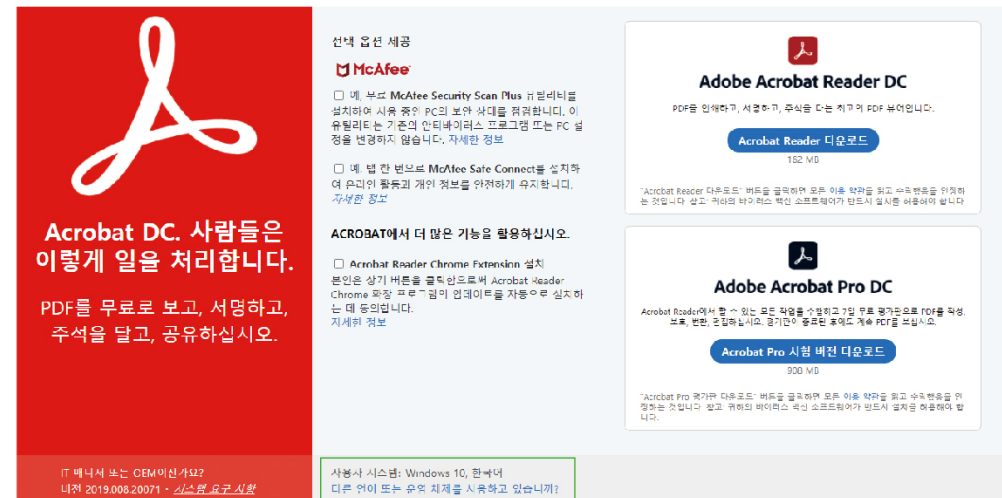
Click on logo to go directly to the download site.

Adobe READER DC

PDF free viewer

https://get.adobe.com/kr/reader/otherversions/

5% 15% 35% 65% 85% 100%

01

Are you using a different language or operating system? **Selection**

Acrobat DC. 사람들은 이렇게 일을 처리합니다.
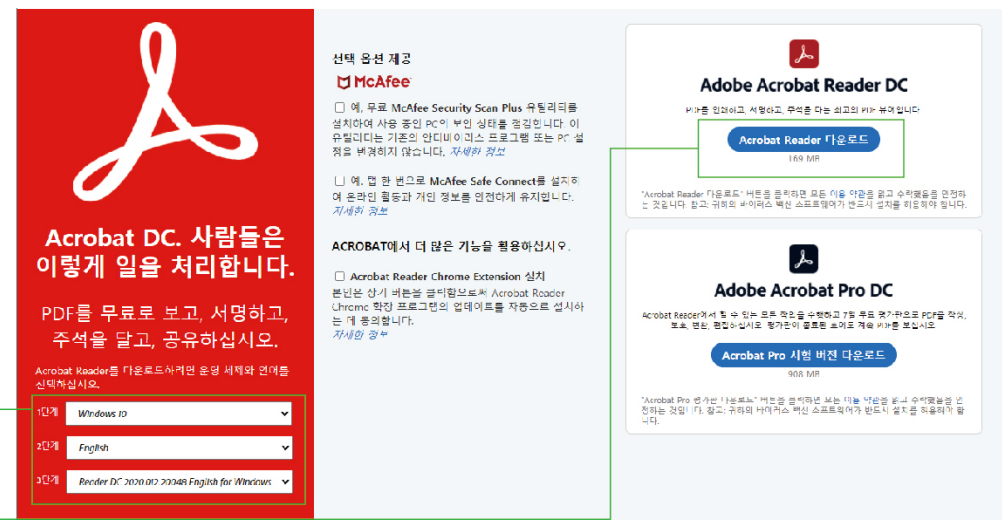PDF를 무료로 보고, 서명하고, 주석을 달고, 공유하십시오.

02

Step 1 Select an operating system
Step 2 Select **English**
Step 3 Select **2020 version**

※ 국문 사용 시 프로그램 다운로드/설치 후
프로그램 상단 도움말 - 업데이트확인 클릭
최신버전(2020년) 으로 업데이트를
반드시 하여야합니다. (3회 이상)

Download and install program

Acrobat DC. 사람들은 이렇게 일을 처리합니다.
PDF를 무료로 보고, 서명하고, 주석을 달고, 공유하십시오.

When the Video(PV) is black,   Download Reader DC 2020.012.20048 or help - check for updates and update to the latest version!

When the Video(PV) sounds, but the screen only shows green wavelengths,   If the system environment is Windows 10, open the reader DC program, press Ctrl+K (default setting), then unlock the security (Advanced) - Sandbox Protection - Enable Protected Mode (M) at startup, close and reopen the program, and the video(PV) will function normally.

PINYFINY

In an age where health is important, interest in optimal exercise has increased.
For optimal exercise, we developed a system to accurately measure muscle strength according to the type of exercise.

— **HHS Myo_module**

— **Log In**

— **Personal information screen**

— **Manage Membership**

— **Member's exercise method management**

— **EMG signal analysis**

hopes your healthy and happy life.

brain wave
SAFETY HELMET

To prevent and reduce industrial accidents, We develop safety monitoring management system using bio-signal(EEG) processing algorithm.
Our system aims to respond quickly and accurately to accidents and disasters that occur at the accident site.

— **New Risk Management Technology**

— **HHS Risk Management System**

— **Bio-signal based Safety Management System**

We are a startup that
promotes human health
and happiness **using bio-signal processing techniques.**
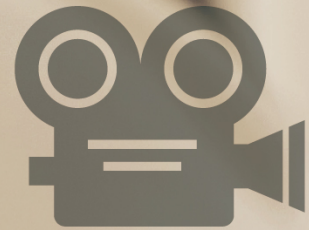
Promotional Video

Check out the vision of **HHS Co., Ltd.** to share the future!

Click here to check out the high-resolution video! »

NEWS Release

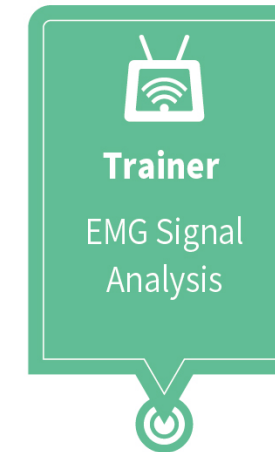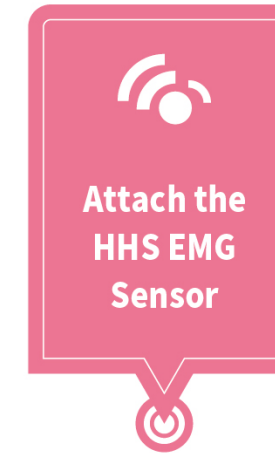**Free Board**

Contact

Click to go to the desired **site.**

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PINYFINY

01 Muscle Activity Measurement **attaching wireless EMG sensors** with regard to the point at which muscles are activated according to the type of exercise

02 A.I. based **EMG data analysis**

03 Correct posture, exercise range according to muscle fatigue, exercise **schedule management**

04 Monitoring **application** that **visualizes** analysis results and provides a total solution to customers

05 Scientific Approach to Exercises(muscle activity) with A.I. Based on analyzed big data, it is used for **rehabilitation** and **exercise education program**

Attach the HHS EMG Sensor

Transmit EMG data

Trainer
EMG Signal Analysis

Feed Back

PRODUCT 01

In an age where health is important, interest in optimal exercise has increased.
For optimal exercise, we developed a system to accurately measure muscle strength according to the type of exercise.
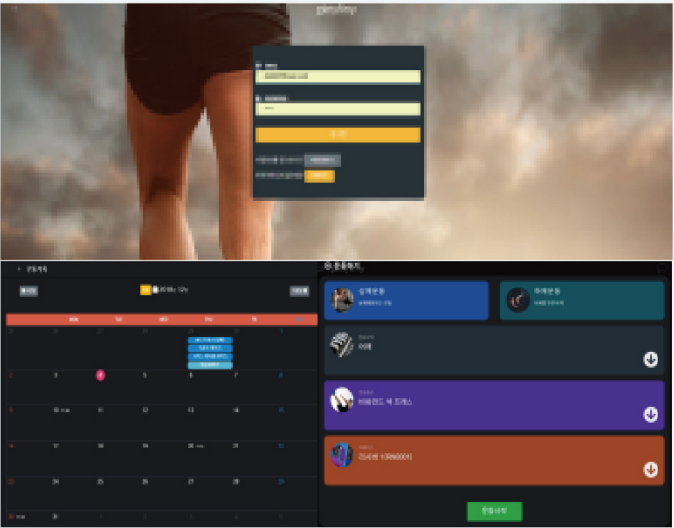
PINYFINY

FEED BACK

Customer

HHS EMG
Sensor Attach

Exercise

Trainer

Correct posture
Exercise range
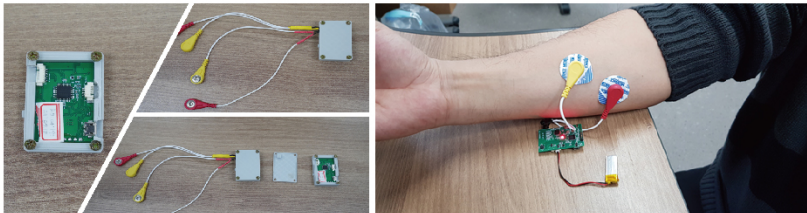Exercise Schedule

Manage
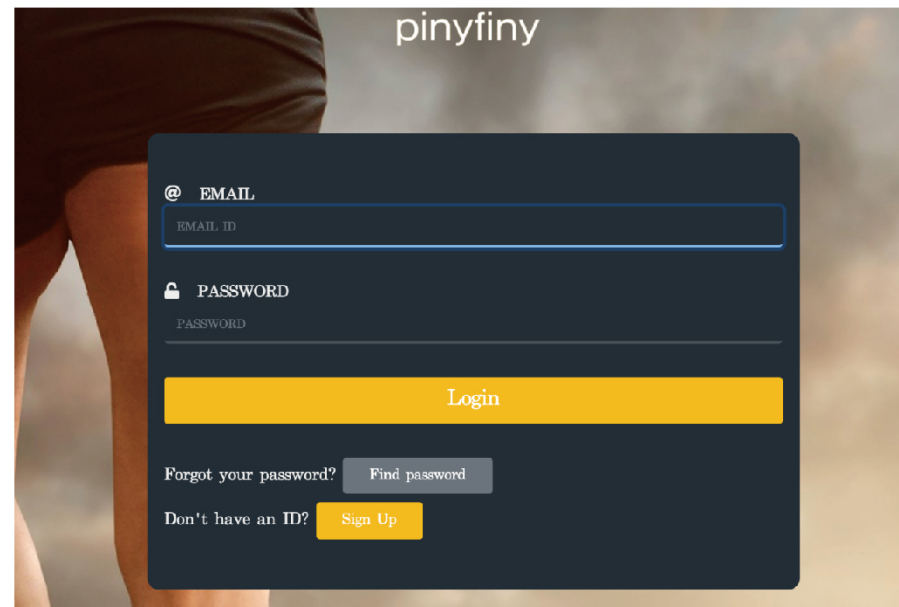
Transmit EMG date

PINYFINY

HHS Myo_module

- Bluetooth based Wireless EMG Sensor
- Support 4 channels
- Include motion sensor(9 axis)
- Up to 8 hours

Log In

- Provide web services for trainers and members

Personal information screen

- Personal information of trainer and members

In an age where health is important, interest in optimal exercise has increased.
For optimal exercise, we developed a system to accurately measure muscle strength according to the type of exercise.
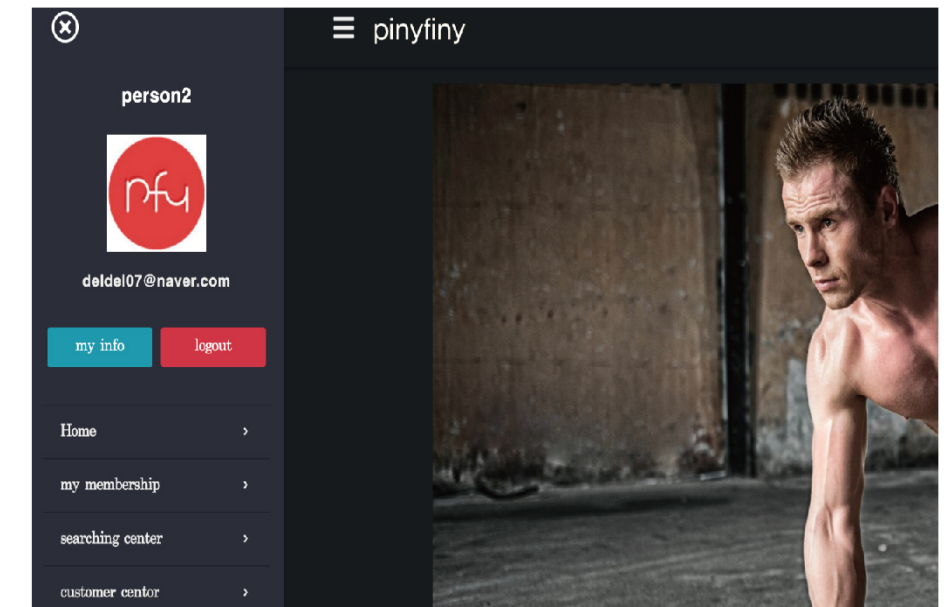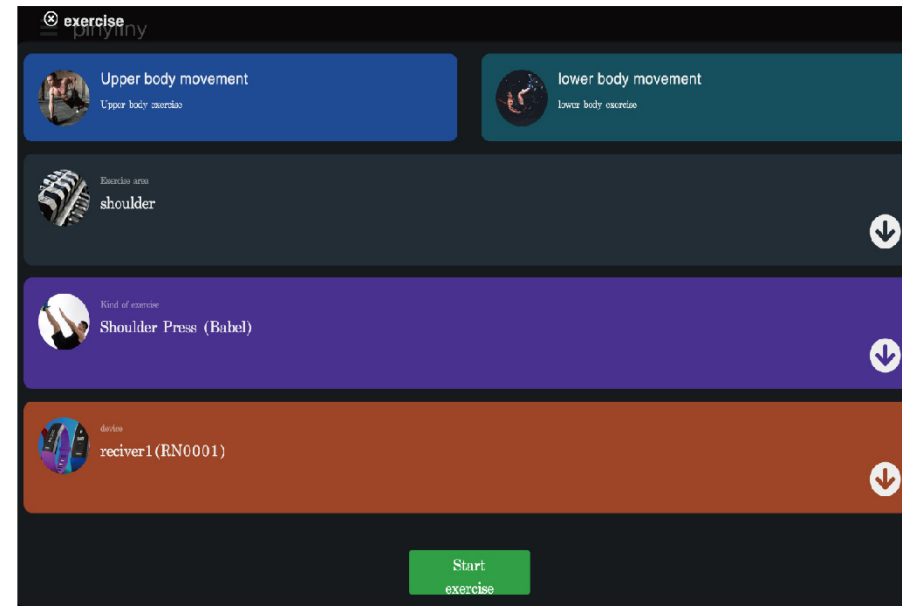
Manage Membership

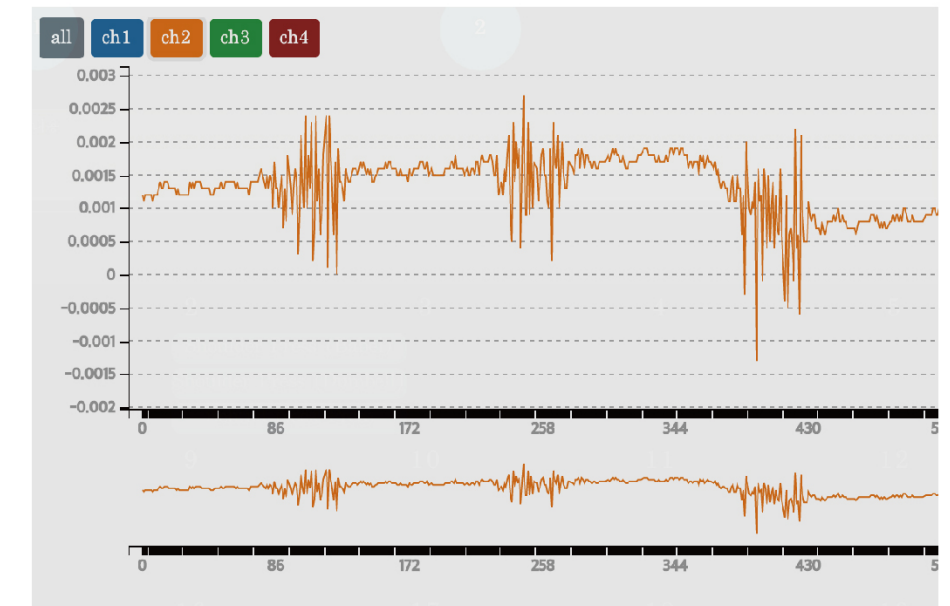- Trainer can manage registered members
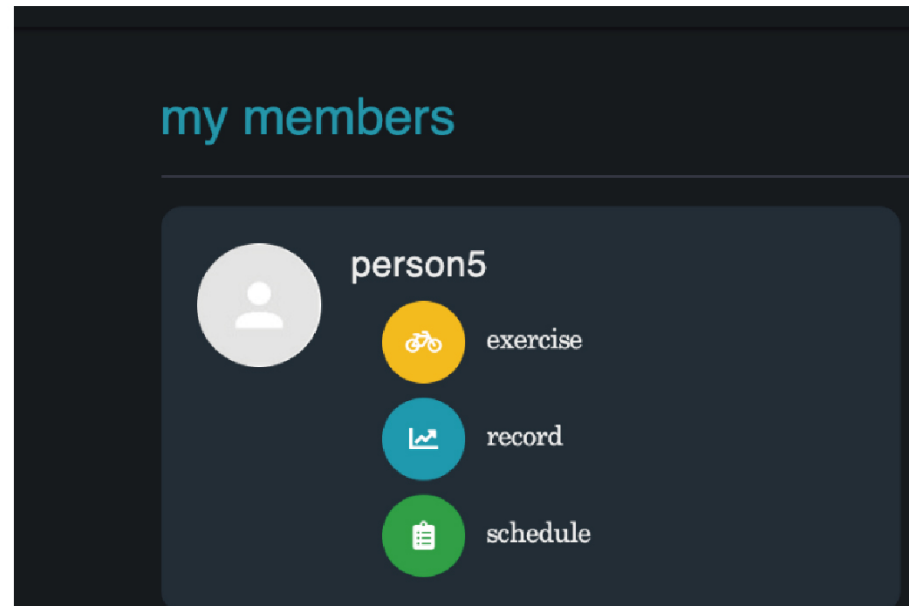
Member's exercise method management

- Trainer can suggest how to exercise to members

EMG signal analysis

- -The trainer can analyze the member's exercise posture more accurately through the analyzed graph

Bio-signal based Safety Management System

To prevent and reduce industrial accidents, We develop safety monitoring management system using bio-signal(EEG) processing algorithm.
Our system aims to respond quickly and accurately to accidents and disasters that occur at the accident site.

— **New Risk Management Technology**

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— **Bio-signal based Safety Management System**

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360°
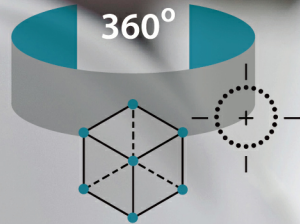
3D Module

Check out the vision of **HHS Co., Ltd.** to share the future!

Click here to check out the high-resolution video! »

NEWS Release

Free Board

Contact

Click to go to the desired **site.**

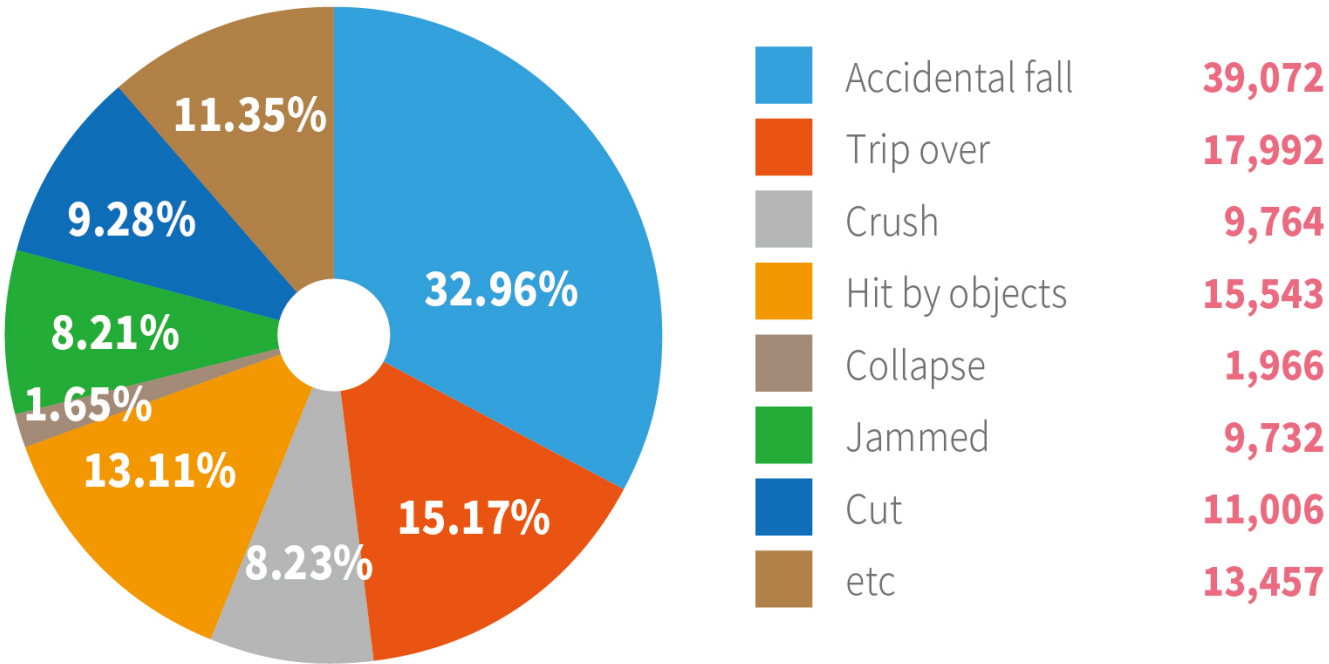**Perspective** ◄ **Orthographic** ► **Front** **Right** **Back** **Left**

01. Increasing number of industrial disasters

- Industrial disasters in South Korea is constantly increasing (20 times of the UK and 4 times of the USA)
- The main cause of the accidents is the poor working condition

Industrial disaster rate, South Korea

Type	2016Y	Increasing rate (%)
Total number of industrial disasters	90,656	0.6
The number of injury from accidents	82,780	0.7
The number of injury from diseases	7,876	-0.5
The number of mortality	1,777	-1.8
The number of mortality from accidents	969	1.5
The number of mortality from diseases	808	-5.5

Ministry of Public Safety and Security accidents analysis

Accidental fall	39,072
Trip over	17,992
Crush	9,764
Hit by objects	15,543
Collapse	1,966
Jammed	9,732
Cut	11,006
etc	13,457

Pie chart values: 32.96%, 15.17%, 8.23%, 13.11%, 1.65%, 8.21%, 9.28%, 11.35%
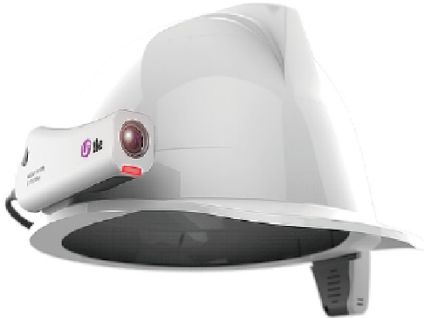
02. Existing Risk Management System

- Exsisting risk management system only detects external risk factors
- Accidents usually occur from lack of concentration or not wearing a helmet

Existing smart helmet functions

Company	Nexsys	Giga Tera KProduct MW	OTOS
Product			
Function	Camera Monitoring	LED light	Working hour display
Wearing detection	X	X	X
Fatigue level detection	X	X	X
Stress level detection	X	X	X

03. New Risk Management Technology

- A camera monitoring operators' eye closure and head movement was selected to use in haul trucks
- Guardvant Technology: 2016 Newmont mining company started to adopt the camera technology

Fatigue level detecting technology adoption

Newmont Selects GuardVant Technology
for Fatigue Monitoring and Collision Avoidance

Guardvant, Inc. Sep. 8, 2016, 4:05 PM

TUCSON, Ariz., - September 6, 2016 - Newmont Ghana has selected GuardVant's fatigue monitoring, proximity detection and collision avoidance systems for its operating gold mines Akyem and Ahafo. By combining these safety technologies, Newmont expects a decrease in safety incidents and operating costs as well as an increase in equipment availability

Expected outcomes by Newmont

- Safety solutions
- A decrease in operating costs
- An increase in equipment availability

Guardvant Technology in Newmont's haul truck

출처:http://www.mining.com/web/newmont-selects-guardvant-technology-for-fatigue-monitoring-and-collision-avoidance/

Camera Technology Limitation

- (Late Detection) eye-closure from tiredness already means an operator is in a sleeping mode
- (Limited Range) fatigue level cannot be checked out of the truck or camera
- (Surrounding Effect) Lack of light at night or dusts in sites lower a quality of detection
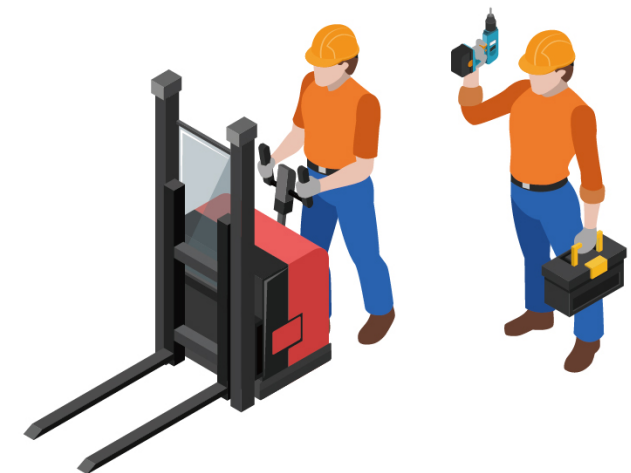
Night working environment

Source: French Journal website

Dusts in a construction site
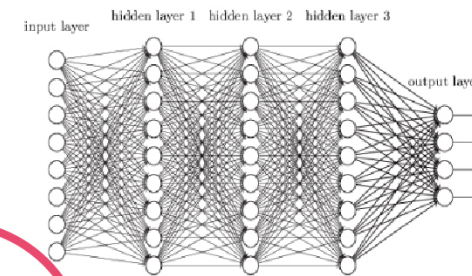

Source: ASIA NEWS Agency

HHS Risk Management System

HHS Neuro_Module

- Brainwaves sensor in helmets
- Communication modules

A.I. based EEG Analysis Server System

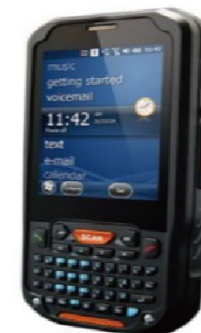- AI based brainwaves analysis server

- Operators' weekly, monthly, annual analysis report

Safety Management Application
(for manager)

- Real-time emergency situation alarm (drowsiness, metal fatigue, Seizure)

Benefit

Satisfying needs for both workers and companies

Benefits for workers

- Reduction in industrial disasters
- Well balanced working conditions
- Increased productivity

Benefits for companies

- Highter company's branding image from a better risk management system
- An increase in production
- No need to check wearing helmet status for risk managers

CONSTRUCTION SAFETY

PRODUCT 02

Bio-signal based Safety Management System

Pre-risk awareness + **Prompt handling afteer an accident** = **Innovative development to safety management**

01 IoT + Wearable + EEG signal processing
: Real-time bio-signal analysis

02 **Replacement of** exsisting paper charts by Smart Safety Management
: Breakthrough in Safety Management Efficiency

03 **Detection within 1 minute** abnormal state before accident and emergency state after accident

04 **Optimization of intensity of labor** by managing break time and stress
→ Reduction of accidents and **improvement of productivity**

Bio-signal based Safety Management System

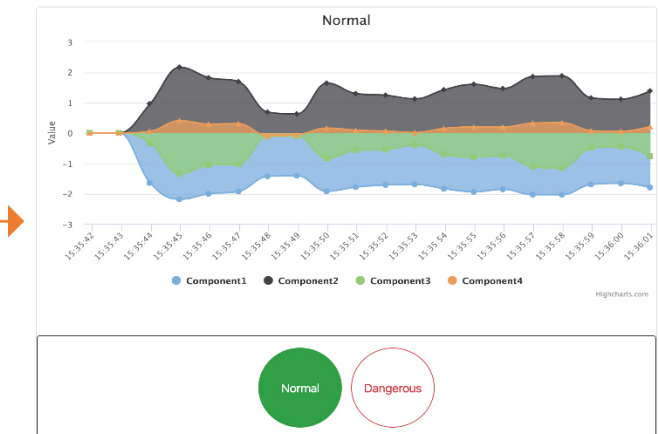**Work 3**   2019-12-12 14:38:28

graph   alram   GPS

· This worker is not wearing a helmet.

Work 4   2019-12-12 14:38:20
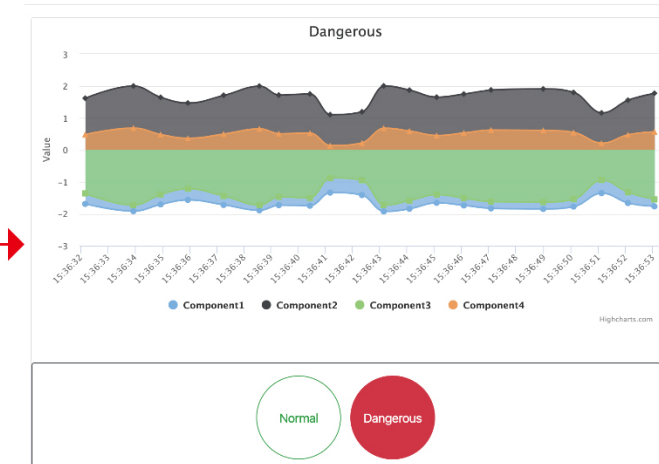
graph   alram   GPS

· This worker is wearing a helmet.

Nomal state

Dangerous state

Team building

Han Hyungseob(CEO)

Academic
- Ulsan University PhD in Computer Science (An AR parameter for drivers and Neurologically-based drowsiness dectection)

Industry
- Development of error diagnosis and prediction system for industrial equipment (Hanjeon KPS)
- Development of microsleep detecting algorithm (Hyundai Motor Company)
- Research about development of anti-sleep road design using brainwaves technology (Korea Expressway Corporation)
- Development of a childhood patient screening system (Ulsan University Hospital)

Kwon oh-guk - System development - Sensor programming   • Academic: Ulsan University BSc Computer Science   • Industry: Hardware developer

Kim ji-hae - Electrical brain signal analysis - Protocol development   • Academic: Dong-a University BBA Business Management Ulsan College BSc Nursing
• Industry: Health Promotion Medicine Centre (Ulsan Hospital)

Han yong-seog(COO) - Business management   • Academic: Ulsan University MA Policy   • Industry: Hyundai Heavy Industries

Kim Jong-kwan(CTO) - Software development   • Industry: Fancyupsoft CEO (Development 20 years)

Moon Kyungkyun - Marketing strategy   • Academic: Ulsan University BSc Computer Science   • Industry: Solar cell company