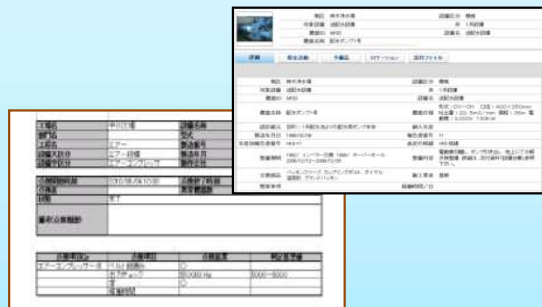

Facility Management Services

Hitachi, Ltd.

Water & Environment Business Unit

I. Asset Management System



- Daily report
- Maintenance report



Equipment ledger

Maintenance history

Planning

Inventory management

Failure history

Location

Statistics

II. Two-way communication with wearable devices



Skilled worker



Field image



Instruction



Worker

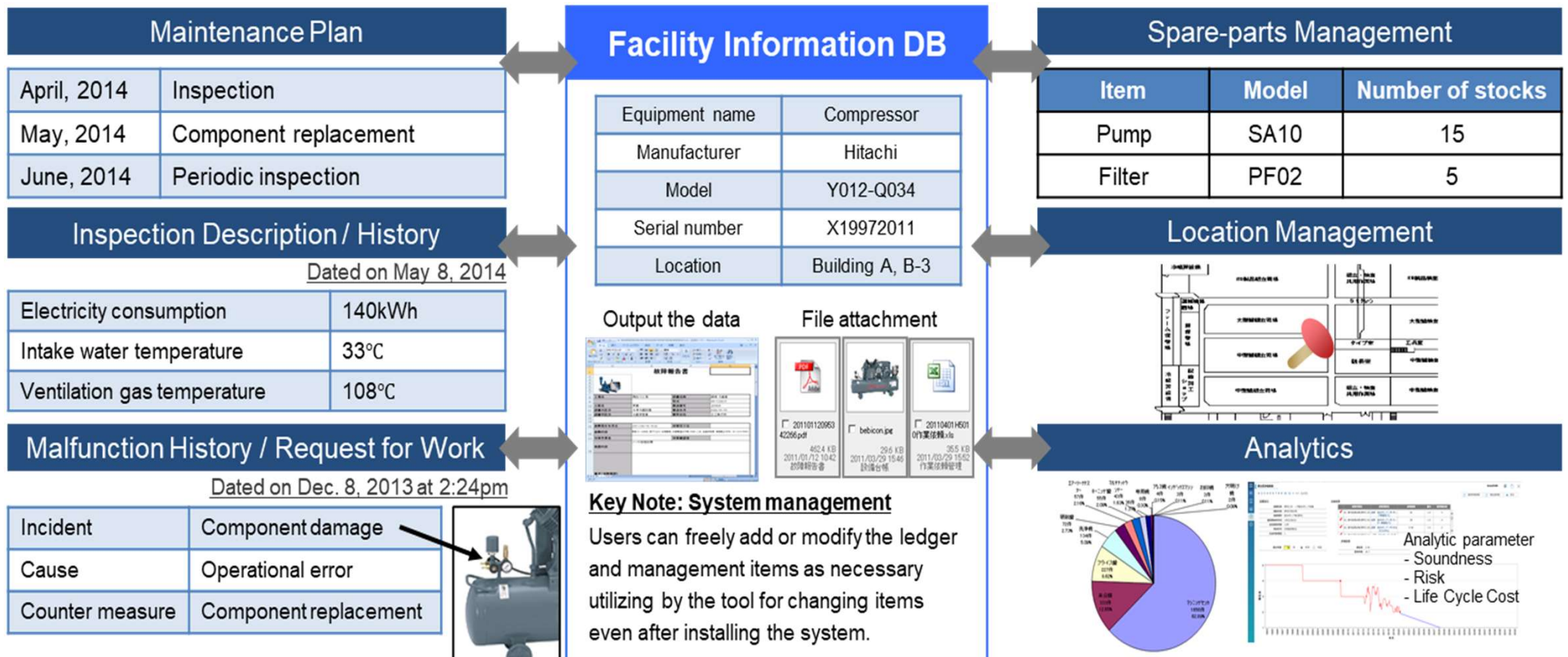


1. Asset Management System

(1) System overview

Data conversion and utilization of unmanaged information

- Equipment ledger achieves operational visualization by integrating information such as facilities, working records, operation, malfunction and repair into one DB.
- Integrated DB enables users to identify appropriate repair time and place and allows users to prevent failures, reduce repair cost and achieve stable operation.



1. Asset Management System

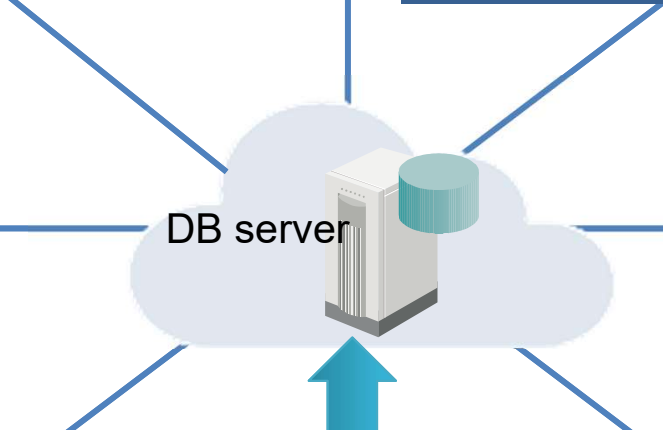
(1) System overview

Specifications

Equipment Ledger

Image · Document

Device Information



Location

Search, display and input facility management data

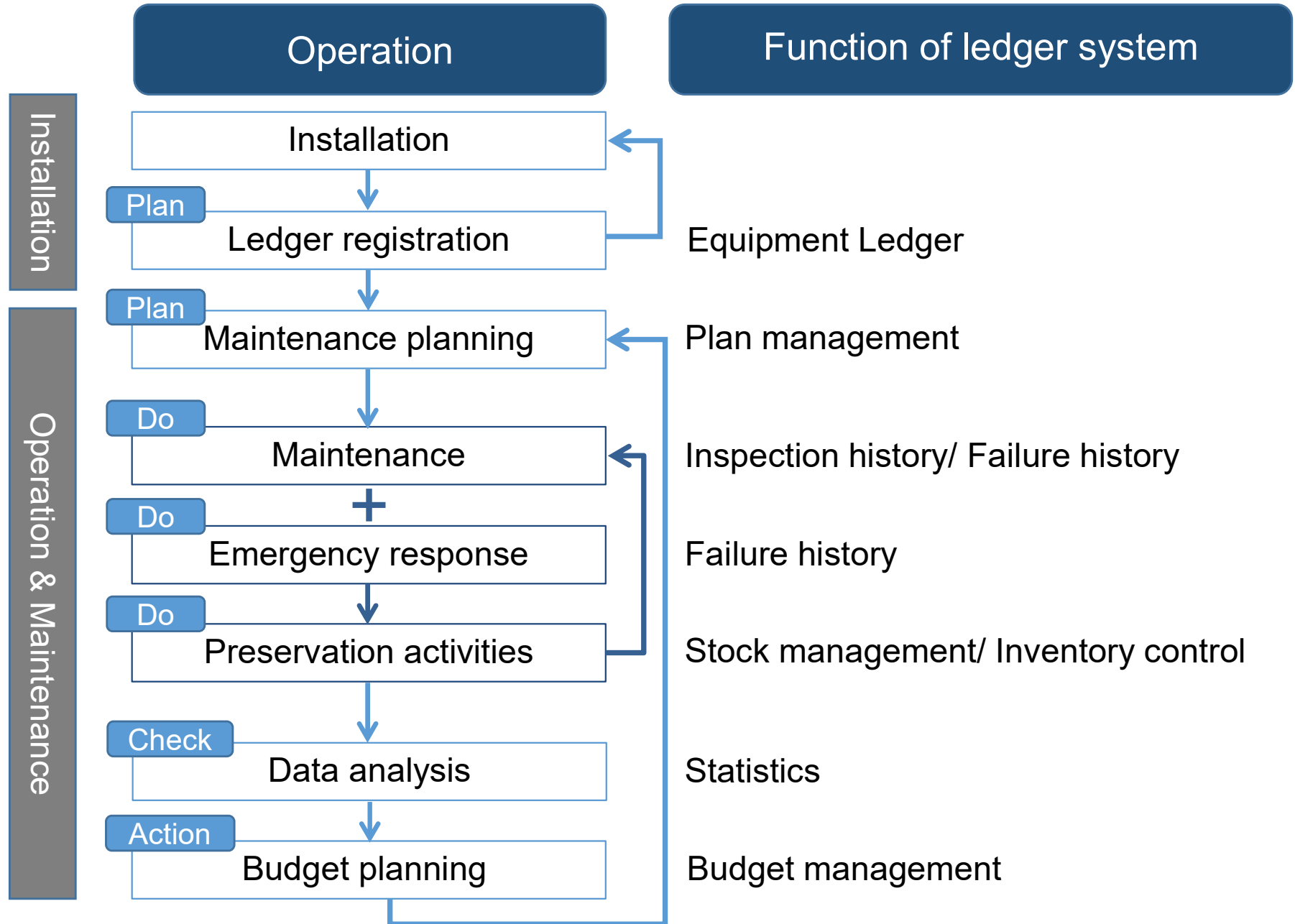
Maintenance Data

Statistics



1. Asset Management System

(2) Operation flow and functions



1. Asset Management System

(3) Main functions - Portal display (Dashboard) -

The screenshot shows the SmartFAM portal interface. It features a sidebar with navigation icons and a main content area with several sections:

- Point 1:** A notification section titled "お知らせ" (Notice) with the text "本サイトは、デモ環境です。" (This site is a demo environment).
- Point 2:** A search section titled "My検索一覧" (My Search List) with a search input field containing "配水ポンプ検索" (Water pump search).
- Point 3:** A maintenance and inventory section. It includes:
 - 監視保全活動一覧** (Monitoring Maintenance Activity List): A table with columns for No., 操作 (Action), 業務名 (Business Name), 保全活動名 (Maintenance Activity Name), 担当者 (Responsible Person), 警戒 / 警告 (Warning / Alert), 開始予定日 (Start Date), and 開始日 (Start Date).

No.	操作	業務名	保全活動名	担当者	警戒 / 警告	開始予定日	開始日
1	🔍	点検履歴	分電盤(ポンプ立上げ)		0 / 0	2019/10/15 00:00	
2	🔍	点検履歴	場内巡視点検		0 / 0	2019/10/18 00:00	
3	🔍	点検履歴	場内巡視点検		0 / 0	2019/10/24 00:00	
4	🔍	点検履歴	場内巡視点検	webadmin	0 / 0	2019/10/25 2	
 - 監視在庫品目一覧** (Monitoring Inventory Item List): A table with columns for No., 操作 (Action), 品目名 (Item Name), 在庫 (Inventory), 安全在庫 (Safety Stock), 入庫予定 (In-stock Date), 出庫予定 (Out-stock Date), and 引当可能 (Available).

No.	操作	品目名	在庫	安全在庫	入庫予定	出庫予定	引当可能
1	🔍	Vベルト	4	5	0	0	4
 - ワークフロー案件一覧(INBOX)** (Workflow Case List (INBOX)): A section with a checkbox for "代理承認可能なワークフロー案件も表示する" (Also display workflow cases that can be approved by the agent) and a table with columns for No., 操作 (Action), 案件ID (Case ID), 案件種別 (Case Type), 現ステップ (Current Step), 進捗 (Progress), 担当者 (Responsible Person), 申請者 (Applicant), and 申請日 (Application Date). The text below the table says "該当する情報はありません。" (No information is displayed).

◆ Point 1

It is possible to display messages to users.



◆ Point 2

There is a search function.



◆ Point 3

Display maintenance and inventory information.



1. Asset Management System

(3) Main functions - Spare parts management -

The screenshot displays the '予備品在庫一覧検索画面' (Spare Parts Inventory Search Screen) in the SmartFAM system. It features a search sidebar on the left, a main inventory table, a detailed ledger view, and an in/out history table.

Point 2: The main inventory table shows the following data:

No.	操作	在庫数	入庫予定数	出庫予定数	安全在庫数	引当可能在庫数	品目コード	品目名	置き場コード	置き場名
1		7	0	0	5	7	ITEM001	取替えポンプ	AREA001	第1倉庫
2		3	0	0	2	3	ITEM002	グランドパッキン	AREA001	第1倉庫

Point 1: The 'Ledger detail screen' for 'ITEM002' (グランドパッキン) shows the following summary:

在庫数	2	安全在庫数	2
入庫予定数	0	出庫予定数	0
引当可能在庫数	3	品目コード	ITEM002
品目名	グランドパッキン	置き場コード	AREA001

Point 3: The 'In/out history' table shows the following data:

No.	操作	入庫数	出庫数	入庫予定数	出庫予定数	入出庫予定日	入出庫日	品目コード	品目名
1		0	3	0	0		2020/03/25	ITEM001	取替えポンプ
2		0	1	0	0		2020/04/03	ITEM002	グランドパッキン
3		4	0	0	0		2020/04/07	ITEM002	グランドパッキン

◆ Point 1

List of facilities that uses spare parts.



◆ Point 2

Get alerted when you fall below the safety stock.



◆ Point 3

In/out storage history



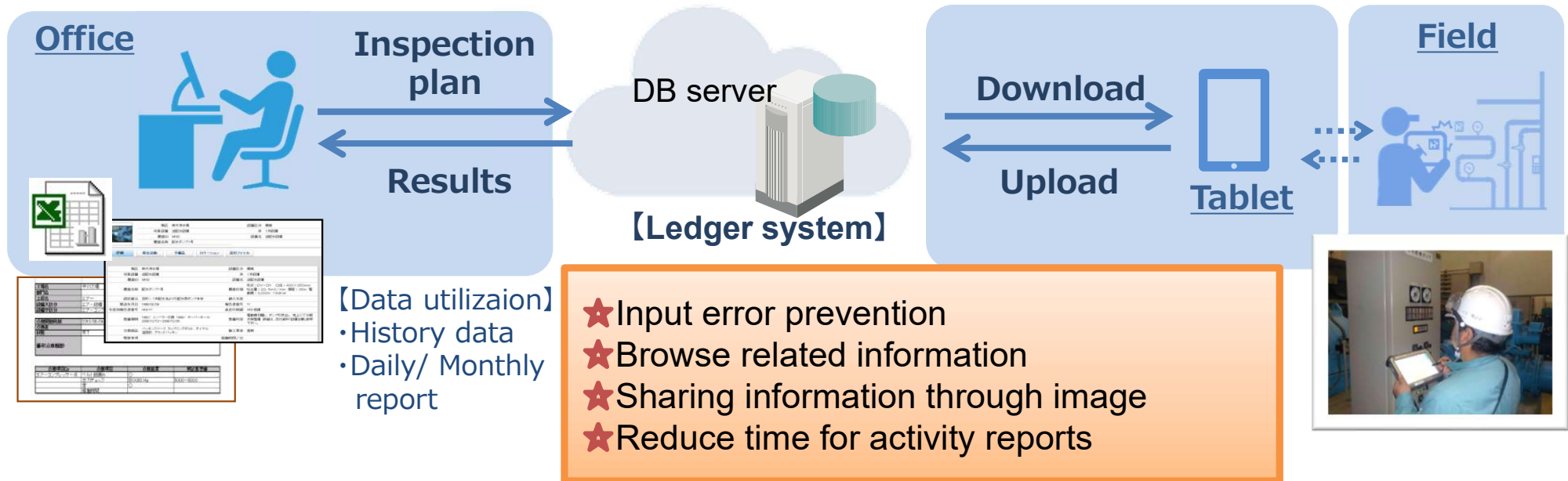
1. Asset Management System

(4) Supporting on-site inspection work using tablets

Input error prevention, work efficiency improvement, and time saving

Download the inspection plan and maintenance in the field.

Data entered in the field will be uploaded automatically to the system.



Input check function



Trend graph



Attachment file



イメージです

IC tag integration



2. Two-way communication with wearable devices

- ① Share images and sounds
- ② Connectable from 4 locations
- ③ Voice and image instructions

- ★ Early response to accidents and problems
- ★ Can be handled by inexperienced workers
- ★ Solving the worker shortage
- ★ Technical education

Head Mounted Display

<Glasses type HMD>



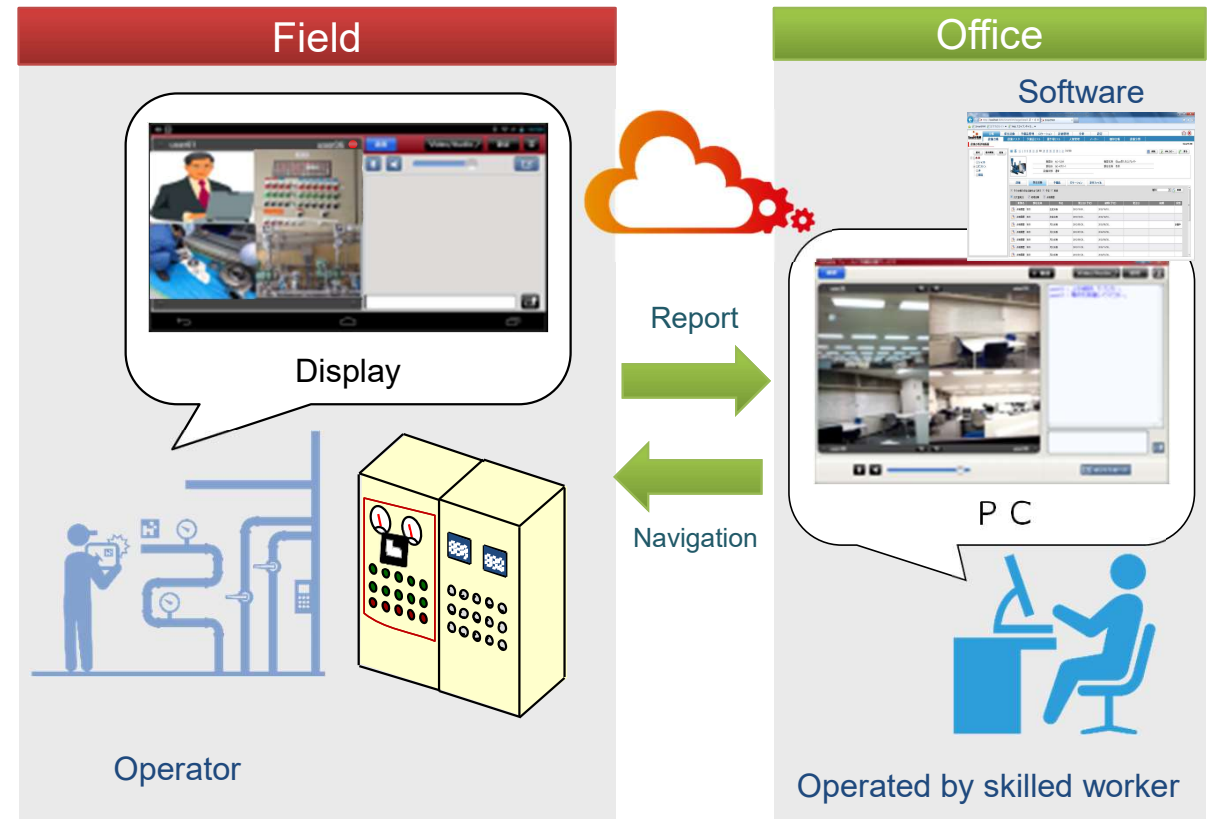
Light and portable

<Helmet-mounted HMD>



Directly attached to helmet

Remote navigation

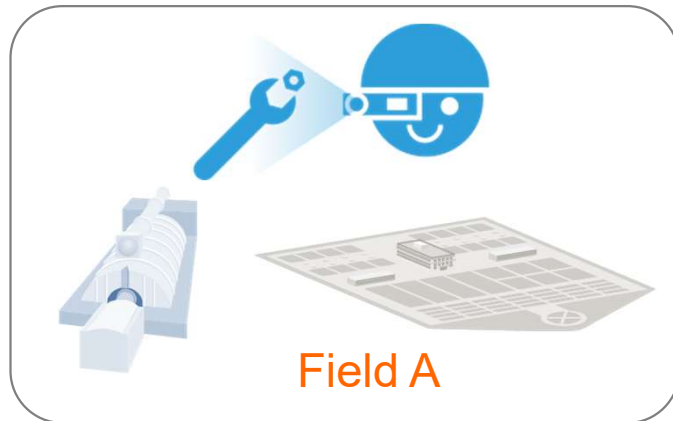


The worker's HMD camera allows to give clear instructions remotely.

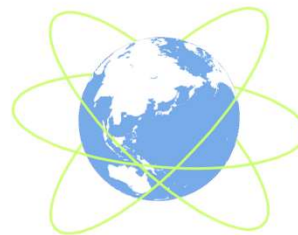
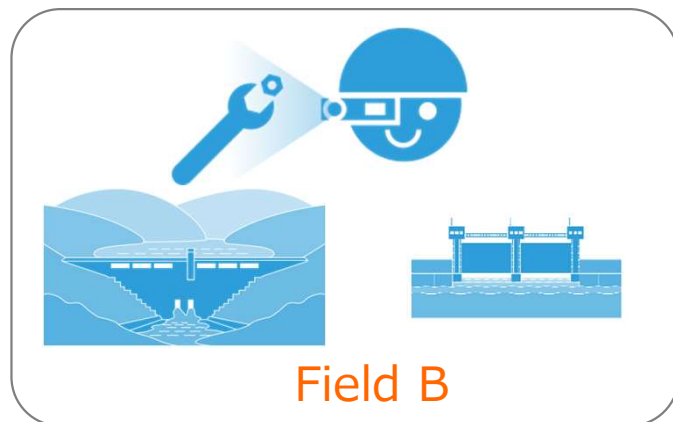
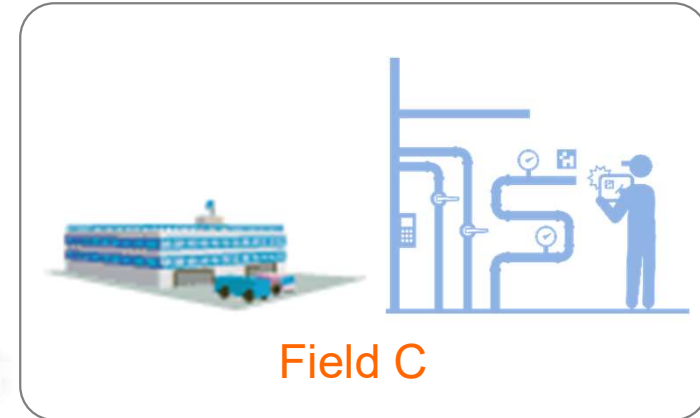
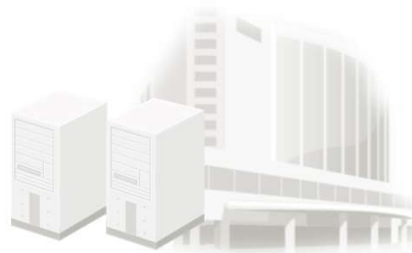
* HMD : Head Mounted Display

2. Two-way communication with wearable devices

- **Connectable from 4 locations.** Grasping the situation from the management base and carrying out inspection work
- **Contributes to the advancement and efficiency of facility maintenance by providing remote work support in emergency situations and recording and viewing work images.**

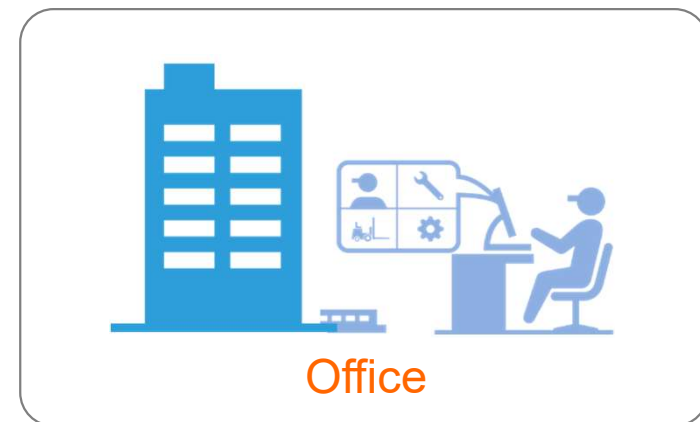


O&M support server



Security

- Encryption (camellia)
- Secure Socket Layer (SSL) tunneling



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Inspire the Next 