

# **FUJITSU Software**

## **AR Checking Application**



## **User's Guide**

-  
February 2015

# Preface

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## Purpose of this document

This document explains how to using AR Checking Application.

## Intended readers

This document additionally targets the AR Checking Application in customer's business and it is targeted to introduce, to construct, and to operate it.

Readers of this document are also assumed to have knowledge of:

- FUJITSU Software Interstage AR Processing Server
- Smart devices
- Operating system that will be used with this product
- FUJITSU Software Interstage Business Process Manager Analytics when cooperating the graph
- FUJITSU Software Interstage List Creator when cooperating the form

## Structure of this document

This document is structured as follows:

### [Chapter 1 Introduction](#)

Describes the outline and the composition of the AR Checking Application.

### [Chapter 2 Installation procedure](#)

Describes the introduction procedure of the AR Checking Application.

### [Chapter 3 Operational procedure of checking application](#)

Describes the operational procedure of the AR Checking Application and the content of the display of the screen.

### [Chapter 4 Customizing procedure of checking application](#)

Describes the procedure when the AR Checking Application is customized.

### [Chapter 5 Output of check result](#)

Describes the output procedure of the check result.

### [Chapter 6 Display of graph](#)

Describes the check result about the procedure when the graph is displayed.

### [Chapter 7 Outputting forms of check result](#)

Describes the procedure when the check result is output to PDF file.

### [Appendix A Data item list of user-defined table](#)

Describes the data item of the user definition table defined in the AR Checking Application.

### [Appendix B Icon list that can be used by additional icon information](#)

Describes the icon list that can be used in the AR Checking Application.

## Notations

- In this manual, the following signs are used to explain.

Sign	Description
[ ]	The item (button name and tag name, etc.) displayed on the screen is shown.
< >	Information that depends on the operational environment is shown.

Sign	Description
{ }	The item enclosed with this sign is omissible.
*	The input is indispensable to the item to which this sign adheres.

- In this document, text that must be replaced by the user is denoted in *italics With Mixed Case* (for example, *installDir*)

## Abbreviations

This manual uses the following abbreviations for the operating systems:

Official name	Abbreviation	
Microsoft Windows Server 2012 R2 Foundation	Windows Server 2012 R2	Windows
Microsoft Windows Server 2012 R2 Standard		
Microsoft Windows Server 2012 R2 Datacenter		
Microsoft Windows Server 2012 Foundation	Windows Server 2012	
Microsoft Windows Server 2012 Standard		
Microsoft Windows Server 2012 Datacenter		
Microsoft Windows Server 2008 R2 Standard	Windows Server 2008 R2	
Microsoft Windows Server 2008 R2 Enterprise		
Microsoft Windows Server 2008 R2 Datacenter		
Microsoft Windows Server 2008 R2 Foundation		
Windows 8.1	Windows 8.1	
Windows 8.1 Pro		
Windows 8.1 Enterprise		
Windows 8	Windows 8	
Windows 8 Pro		
Windows 8 Enterprise		

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# Chapter 1 Introduction

## 1.1 Purpose

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### What is the AR Checking Application?

The AR Checking Application is an application that achieves the prevention of a human mistake by sharing the efficiency improvement of the checking and knowhow in the site and information on awareness and notes, etc. by introducing into the site of a smart device and using AR.

This document describes the use of the AR Checking Application. It is assumption to have introduced Interstage AR Processing Server to use the AR Checking Application.

## 1.2 Outline of AR Checking Application

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### Outline of function

The AR Checking Application offers the following functions.

#### AR Checking Application

The AR Checking Application is Web application that operates on the AR processing client. The object equipment is identified when a smart device is held up in the marker, and the following work can be done.

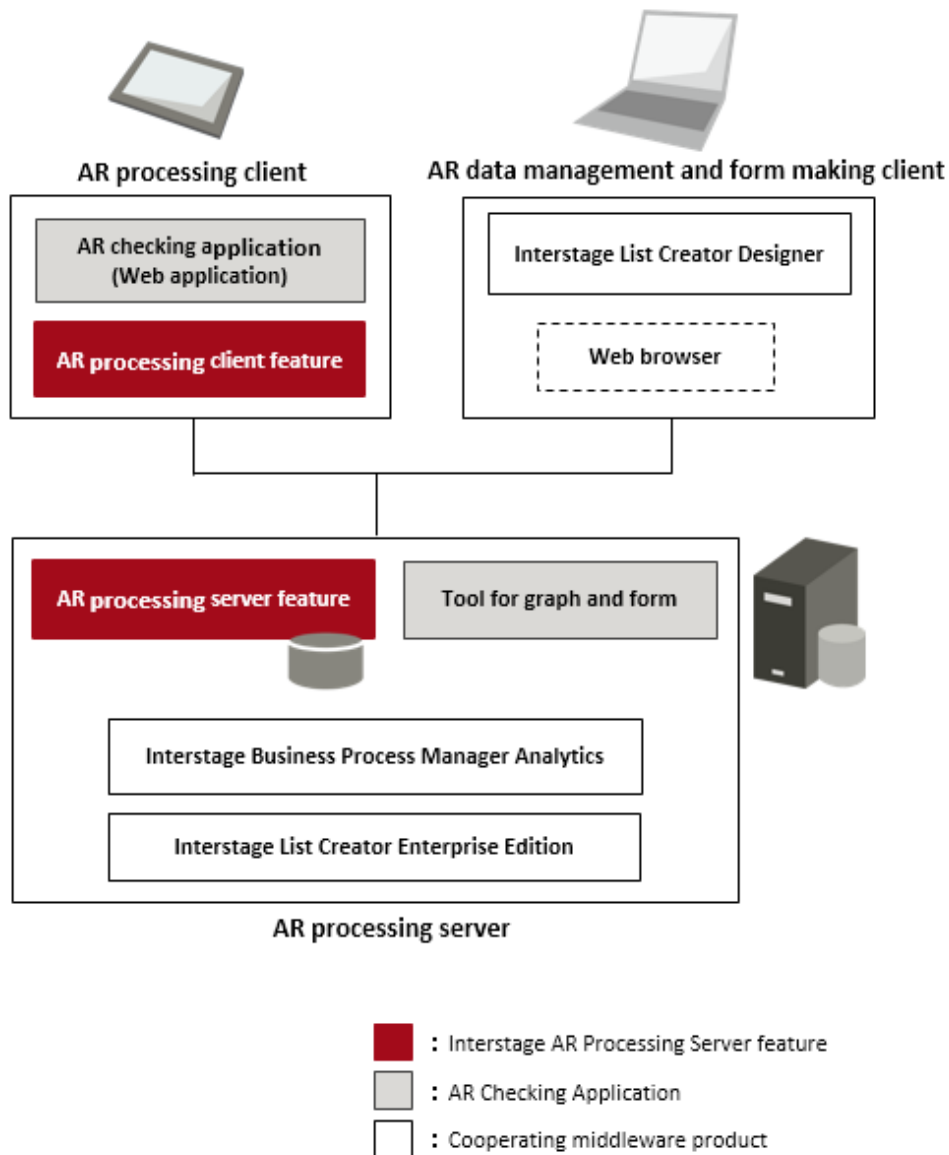
- Display / Result input / Transmission of check item of object equipment
- Input/reference to message to object equipment
- Reference to information (history in manual and the past etc.) related to object equipment

#### Tool for graph and form

It is a batch program that operates on the AR processing server outputting the check result data stored in the AR processing server to the CSV file for the graph and form.

### System configuration

The system configuration of the AR Checking Application is as follows.



#### AR processing client

- AR software that runs on smart devices, performing image recognition for AR markers, AR overlay content display, communication with the server, data cache management and log management.
- The AR Checking Application stored in the AR processing server is downloaded to the AR processing client and it executes it.

#### AR processing server

- Runs the REST API and performs centralized management of information related to AR markers. AR processing servers also manage the system operation of Interstage AR Processing Server, such as starting and stopping an AR processing server, deploying applications and backing up data.
- Reflects the check result data stored in the AR processing server in Interstage Business Process Manager Analytics by the tool for the graph, and displays the check result in the graph.
- Reflects the check result data stored in the AR processing server in Interstage List Creator by the tool for the form, and outputs the check result to the form.





The AR Checking Application corresponds to Model A: Small-scale entry model for an intranet environment of the system configuration of Interstage AR Processing Server.

Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for the system configuration of Interstage AR Processing Server.

#### AR data management•Form making client

- Manages the data of Interstage AR Processing Server such as the download of the AR marker, Scenario making, AR overlay display contents.
- Makes the form by Interstage List Creator designer.

## 1.3 Configuration of checking application

The Configuration of the checking application is as shown in the table below.

Configuration of checking application			Storage directory	File name
Checking application			\\tenkenapl	tenken.war
Checking table data(sample)			\\sampledata	arsvdb.zip
				arsvfile.zip
				backupConfiguration.ini
Tool for graph and form	Check result output command		\\artenkencsvcmd	loadtenkendata.bat
				loadtenkendatamulti.jar
				mparevt.jar
	Check result graph output (sample)	Graph output definition file (*1)	\\artgraph	artenkendef.aar
		Definition files of the check result output command	\\artgraph	GRP_item.csv
				GRP_date.ini
	messedatamap.csv			
	Check result form output (sample)	Form definition files (pump checking table)(*2)	\\archouhyou\\form	pumpTenkenSheet_A.bip
				pumpTenkenSheet_A.ovd
				pumpTenkenSheet_A.pmd
				pumpTenkenSheet_A.psf
		Definition files of the check result output command	\\archouhyou\\csv	FRM_item.csv
				FRM_date.ini
messedatamap.csv				
tenkendatamap.csv				
Manual		Software Release Guide	\\	readme.txt
		Users's guide (This manual)	\\manual	arapptenken.pdf

\*1) Definition file for Interstage Business Process Manager Analytics

\*2) Definition file for Interstage List Creator

## 1.4 Operating environment

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The system requirements is as follows.

### 1.4.1 AR processing server

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#### Hardware environment

Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for the AR processing server.

#### Software environment

##### Operating systems

Window is required. Refer to the following manuals for details.

- Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for the AR processing server.
- Refer to "Interstage Business Process Manager Analytics V12 Software Release Guide" when the graph is displayed.
- Refer to "Interstage List Creator Enterprise Edition V10 Software Release Guide" When the form is output.

##### Required software

- FUJITSU Software Interstage AR Processing Server V1
- FUJITSU Software Interstage Business Process Manager Analytics V12 when the graph is displayed.
- FUJITSU Software Interstage List Creator Enterprise Edition V10 when the form is output.
- JRE6/JDK6 or JRE7/JDK7 when check result output command is used.

### 1.4.2 AR processing client

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#### Hardware environment

##### Supported smart devices

The terminal that corresponds to the following condition is a confirmed operation among the confirmed operation terminals of Interstage AR Processing Server.

- Terminal equipped with Operating systems described in software environment
- Tablet terminal

The list of supported smart devices will be updated progressively. Refer to the Fujitsu Technology Solutions Partner Extranet and External Collaboration for details:

<https://partners.ts.fujitsu.com/>

Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for other hardware environments.

#### Software environment

##### Operating systems

Android or Windows is required.

Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for details.

##### Required software

FUJITSU Software Interstage AR Processing Server V1

### 1.4.3 AR data management and form making client

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#### Hardware environment

- Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for the AR data management client.

- Refer to "Interstage List Creator Designer V10 Software Release Guide" when the form is output.

## **Software environment**

### Operating systems

- Refer to "FUJITSU Software Interstage AR Processing Server V1 Overview" for the AR data management client.
- Refer to "Interstage List Creator Designer V10 Software Release Guide" for form making client.

### Indispensable products

- FUJITSU Software Interstage AR Processing Server V1
- FUJITSU Software Interstage List Creator Designer V10 when the form is output.

# Chapter 2 Installation procedure

## 2.1 Preparation

It is necessary to restore the property of the AR Checking Application to the AR processing server to install the AR Checking Application.

Existing assets in the AR processing server are deleted by restoring it, Therefore, contact a technological member, when you use existing assets together with the AR Checking Application.

## 2.2 Server preparation

### 2.2.1 Installation

Refer to the chapter of the installation of the server of "FUJITSU Software Interstage AR Processing Server V1 Installation Guide" for the installation of the AR processing server.

### 2.2.2 Setup

Refer to the chapter of the setup of the server of "FUJITSU Software Interstage AR Processing Server V1 Installation Guide" for the setup of the AR processing server.

### 2.2.3 Restoring

When the property of the checking application is restored, peculiar information(user definition table etc.) in checking application and standard data (overlay display data and scenario, etc. in data base) in Interstage AR Processing Server is stored.

Commands used for restoring are stored in the following directory:

*installDir\bin\*

1. Stop the web container:

```
> arsvadmin stop-webcontainer
```

2. Stop the database:

```
> arsvadmin stop-db
```

3. Checking application property "\sampledata" is copied onto the directory the backup ahead.

Refer to the chapter of the setup of the server of "FUJITSU Software Interstage AR Processing Server V1 Installation Guide" for the directory the backup the AR processing server ahead.

When the directory is a default value the backup ahead, it becomes the following:

```
C:\Program Files\Interstage\ISARbackup
```

4. Restore the checking application property.

```
> arsvrestore --target sampledata
```

The following message will be output: By restoring, the current database data will be deleted. Enter "y" to start the restoration, or "n" to abort it.

```
Current DB data will be lost, if command is run. Do execute?  
[y,n]  
=>
```

5. Start the database:

```
> arsvadmin start-db
```

6. Start the web container:

```
> arsvadmin start-webcontainer
```

### Information

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for details.

## 2.2.4 Deploying the web application

Deploy the web application on the AR processing server.

Commands used for deploying is stored in the following directory:

installDir\bin\

Execute the command below:

```
> arsvadmin deploy <path preservation ahead>\tenken.war
```

### Information

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for details.

## 2.3 Preparation of smart devices

### 2.3.1 Installation

Refer to the chapter of the installation of a smart device of "FUJITSU Software Interstage AR Processing Server V1 Installation Guide" for the installation of the AR processing client on the smart device.

### 2.3.2 Setup

Refer to the chapter of the setup of a smart device of "FUJITSU Software Interstage AR Processing Server V1 Installation Guide" for the setup of the smart device.

## 2.4 Starts the AR Checking Application

Start the checking application on the AR processing client.

Set following URL in "Overlay application" of "InterstageAR Dev".

```
http://host name of web server or Internet Protocol address:port number/tenken/index.html
```

### Note

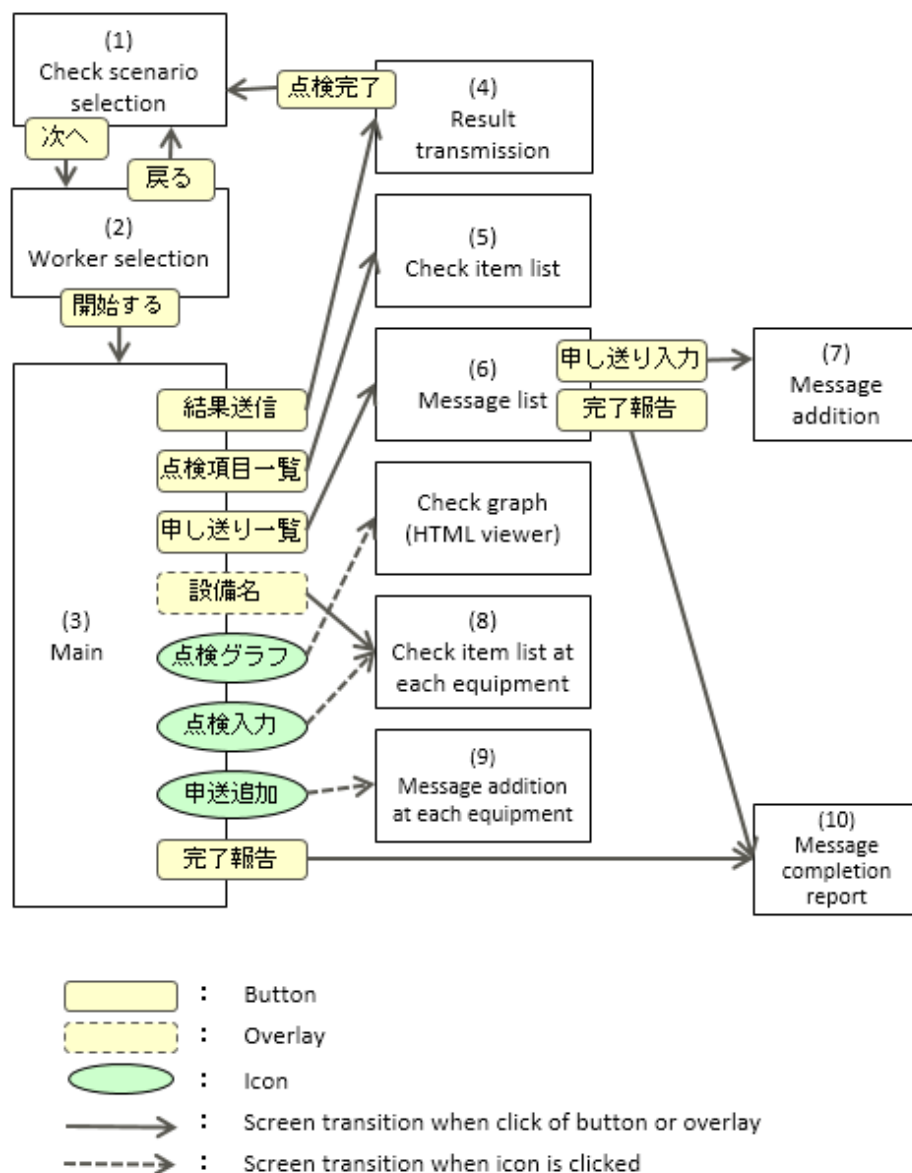
Set URL of the account of the AR processing server to the host name (Internet Protocol address) or the port number. Change URL of the account of the AR processing server at the same time when you change URL of the connection destination.

Refer to "FUJITSU Software Interstage AR Processing Server V1 Installation Guide" for the setting of the account of the AR processing server.

## Chapter 3 Operational procedure of checking application

The transition of the operation screen of the checking application is as follows.

The figure in the chart shows the screen number in the table of the following screen explanations.



In this manual, the online environment and the offline environment are defined as follows:

### Online environment

The operation mode is server connection mode and the state of the network is online

### Offline environment

The operational mode is stand-alone mode or the state of the network is off-line.

Operation mode is decided in the state of the network when AR Checking Application starts.

When the state of the network is online, it is "server connection mode".

When the state of the network is off-line, it is "Stand-alone mode".

The checking by AR Checking Application can be executed even by the off-line environment. However, the resource used to check cannot be downloaded, and the check result cannot be up-loaded by the off-line environment.

Therefore, under the online environment or the off-line environment, the beginning procedure and procedure for ending after result is up-loaded is different.

## Procedure for checking under the online environment

### Beginning

1. Download the scenario on the check scenario selection screen, and select the scenario, and push [次へ](next)button.
2. Download the related resource on the worker selection screen, and select the worker, and push [開始する](beginning)button.
3. Begin the checking if the main screen is displayed.

### Checking

1. Move to the place with the equipment to be checked.
2. Hold up the tablet in the marker of equipment. Then, information related to equipment is displayed.
3. Push [点検入力](check input) button, and input the check value of the selection equipment.
4. Execute the following if necessary.
  - Push [申送追加]button, and input message.
  - Push [申し送り一覧]button, and refer the message list.
  - push [完了報告]button, and Input the completion report to the message.
  - Refer the check graph from [点検グラフ]icon.
  - In the overlay display, refer the equipment name and message.
  - Switch the checking scene with [シーン切り替え]button.
5. Execute the above-mentioned to each equipment to be checked.

### Ending after result is up-loaded

1. Push the [結果送信](result transmission) button when the check work ends. Then, the result transmission screen is displayed.
  2. Select the item up-loaded on the result transmission screen, and Upload it pushing [送信(選択分のみ)] (transmission (Only by the selection))button or [一括結果送信(未選択含む)](batch result transmission (The unselection is included))button.
  3. End the check work pushing [点検完了](check completion)button when you push [送信(選択分のみ)](transmission (Only by the selection))button.
- Respond to the confirming message displayed after the transmission is completed, and end the check work, when you push [一括結果送信(未選択含む)](batch result transmission (The unselection is included))button.

## Procedure for checking under the off-line environment

### Beginning

1. Move to the online environment that can use a smart device.
2. Download the scenario on the check scenario selection screen, and select the scenario, and click [次へ](next)Button.
3. Download the related resource on the worker selection screen.
4. Return to the beginning screen of the AR overlay display application pushing the [戻る](return) button of the smart device to end the checking application once.
5. Move to the place (off-line environment) where the checking.
6. Start checking application.
7. Push [次へ](next)button on the check scenario selection screen.
8. Push [開始する](beginning)button on the worker selection screen.

9. Push [OK]button, if message "作業中データがあります。この作業を再開しますか?" (There is data while working. Is this work restarted?) is displayed.
10. Begin the checking if the main screen is displayed.

### Checking

It is the same as the case of the online environment. Refer to the check procedure of the online environment.

However, the check graph is not displayed under the off-line environment.

### Ending after result is up-loaded

1. Return to the beginning screen of the AR overlay display application pushing the [戻る](return) button of the smart device to end the checking application once.
2. Move to the online environment that can use a smart device.
3. Start checking application.
4. Push [次へ](next) button on the check scenario selection screen.
5. Push [開始する](beginning) button on the worker selection screen.
6. Push [OK] button, if message "作業中データがあります。この作業を再開しますか?" (There is data while working. Is this work restarted?) is displayed.
7. Push the [結果送信](result transmission) button when the main screen is displayed.
8. Select the item up-loaded on the result transmission screen, and Upload it pushing [送信(選択分のみ)] (transmission (Only by the selection))button or [一括結果送信(未選択含む)](batch result transmission (The unselection is included))button.
9. End the check work pushing [点検完了](check completion)button when you push [送信(選択分のみ)] (transmission (Only by the selection))button.

Respond to the confirming message displayed after the transmission is completed, and end the check work, when you push [一括結果送信(未選択含む)](batch result transmission (The unselection is included))button.

## 3.1 Check scenario selection screen

It is a screen where the check scenario is downloaded and selected.

Figure 3.1 Check scenario selection screen

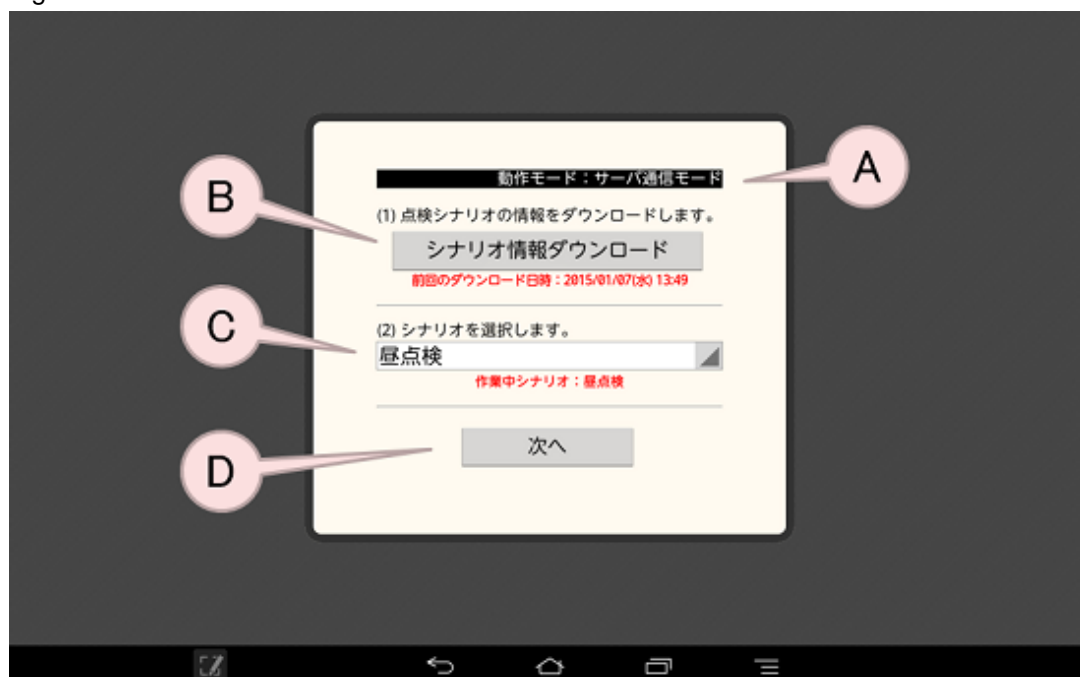




Table 3.1 Check scenario selection screen

Sign	Name	Description
A	動作モード	The operational mode of AR Checking Application is displayed.
B	[シナリオ情報ダウンロード] button	Latest scenario information is downloaded. The last download date is displayed under button. When you download the data under work, the alert message is displayed, because the content of work is annulled.
C	[シナリオ選択] pull-down menu	The scenario is selected. The scenario working now is displayed under the pull-down menu.
D	[次へ] button	The worker selection screen(2) is displayed. Because the content of work is annulled when the scenario is changed by the scenario selection pull-down, the alert message is displayed.

## 3.2 Worker selection screen

It is a screen where download of related resource before it checks and the worker is selected.

Figure 3.2 Worker selection screen

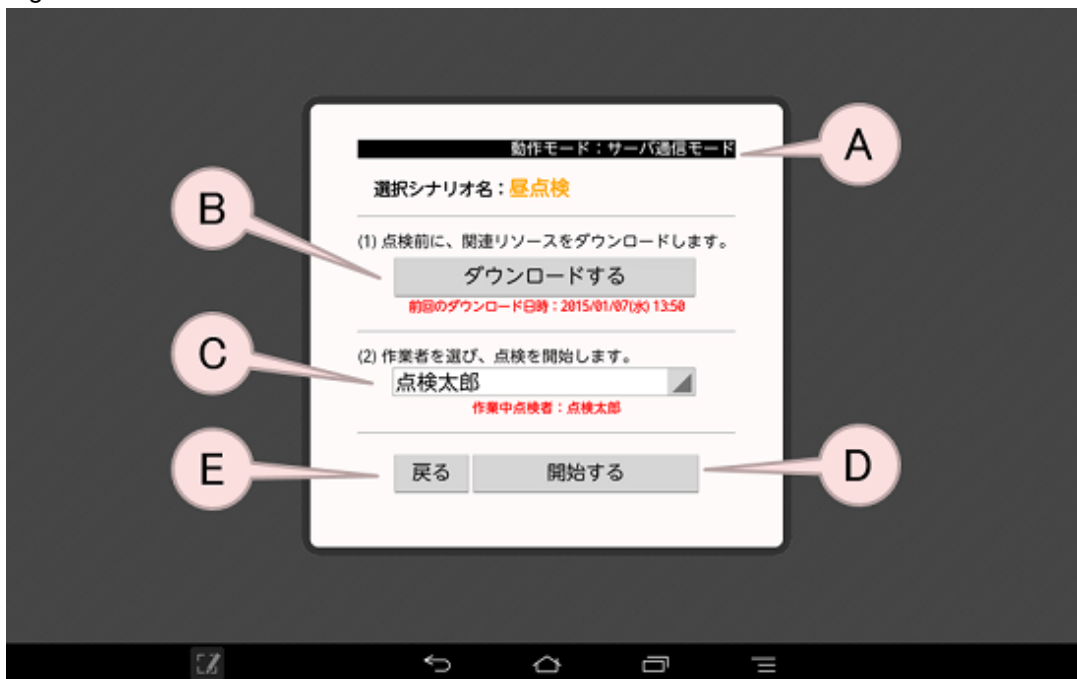


Table 3.2 Worker selection screen

Sign	Name	Description
A	動作モード	Operation mode of AR Checking Application is displayed.
B	[ダウンロードする] button	The latest related resource is downloaded. The last download date is displayed under button. When you download the data under work, the alert message is displayed, because the content of work is annulled.
C	[作業者選択] pull-down menu	The worker is selected. The worker who is working now is displayed under the pull-down menu.

Sign	Name	Description
D	[開始する] button	The main screen(3) is displayed.  When the worker is changed by the worker selection pull-down menu, the alert message is displayed, because the content of work is annulled.
E	[戻る] button	It returns to the check scenario selection screen(1).

### 3.3 Main screen

It is a main screen of the AR Checking Application.

The following can be done on this screen.

Input of check value, display of check graph, addition of message, transmission of result and overlay.

Figure 3.3 Main screen



Table 3.3 Main screen

Sign	Name	Description
A	[結果送信] button	The result transmission screen(4) is displayed.
B	[点検項目一覧] button	The check item list screen(5) is displayed.
C	[申し送り一覧] button	The message list screen(6) is displayed.
D	[PAUSE] / [LIVE] button	PAUSE(temporary stop) and LINE (Be operating) of the AR camera are switched.
E	[シーン切り替え] button	It switches to the next scene, and overlay does the switched scene. It is [点検方法説明](Explain the check method) in the above figure.
F	[設備名] overlay	The list of check item at each equipment screen(8) is displayed. It is [R-1冷凍機](R-1 freezer) in the above figure.
G	[申し送り] overlay	Message the object is moved to the uppermost part of a right area. It is [温度上昇傾向](Temperature uptrend), [油漏れあり](Oil leaks) in the above figure.
H	Other overlay	The definition to which authoring is done with Interstage AR Processing Server is done and overlay is done. It is [昼点検の点検操作](The check in daytime) in the above figure.

Sign	Name	Description
I	追加アイコン情報	An additional icon to open the file that has been defined is displayed. It is [マニュアル](manual), [障害履歴](trouble history), and [在庫表](stock table) in the above figure.
J	[点検グラフ] icon	The check graph is displayed by the HTML viewer.
K	[点検入力] icon	The list of check item at each equipment screen(8) is displayed.
L	[申送追加] icon	The message addition screen(9) at each equipment is displayed.  The added message is displayed in the [申し送り](message) overlay and lower right of the screen.
M	[完了報告] button	The message completion report screen(10) is displayed.

## 3.4 Result transmission screen

It is a screen where the check result is transmitted.

Figure 3.4 Result transmission screen



Table 3.4 Result transmission screen

Sign	Name	Description
A	[結果送信] button	The result transmission screen(4) is displayed.
B	[点検項目一覧] button	The check item list screen(5) is displayed.
C	[申し送り一覧] button	The message list screen(6) is displayed.
D	点検項目表	The state of all item to be checked is displayed.  The item of non-completion is displayed in red.
E	[全選択] button	All equipment is selected as an object of the result transmission.
F	[全解除] button	All the equipment that has been selected is released as an object of the result transmission.
G	[点検値未入力項目がある場合も送信許可] check box	Check it when the check value permits transmitting even if there is an item of the uninput.

Sign	Name	Description
		The result cannot transmit when not checking it until the input of all items is completed.
H	[送信(選択分のみ)] button	Only the check result of the selected equipment is transmitted to the server. The button is disabled in stand-alone mode, it is not transmitted.
I	[点検完了] button	The check work is completed, and it returns to the check scenario selection screen(1).
J	[一括結果送信(未選択含む)] button	All the check results are transmitted to the server. The button is disabled in stand-alone mode, it is not transmitted.
K	[閉じる] button	The result transmission screen is shut, and it returns to the main screen(3).

### 3.5 Check item list screen (all equipment)

It is a screen where the item to be checked of all equipment is listed.

Figure 3.5 Check item list screen (all equipment)



Table 3.5 Check item list screen (all equipment)

Sig n	Name	Description
A	[結果送信] button	The result transmission screen(4) is displayed.
B	[点検項目一覧] button	The check item list screen(5) is displayed.
C	[申し送り一覧] button	The message list screen(6) is displayed.
D	[表示切替] button	The check item list screen is moved to the right side, and the camera shot is displayed left. It returns to former position when [表示切替](display switch) button is clicked again.
E	[全点検項目値クリア] button	The value of [今回値](this time value) all the checing item is cleared.
F	[クリア] button	The [基本項目](basic item) or [今回値](this time value) of checking item of equipment is cleared.
G	[今回値] field	This time check value is input.

Sign	Name	Description
		When the value is not input, it is displayed in yellow. When the value in the standard is input, it is displayed in light blue. When the value that exceeds the standard is input, it is displayed in red.
H	[起動中。点検作業あり](operating: There is check work) button [停止中。点検作業なし](stopping: There is no check work) button	Equipment is started, and the stop is switched. It does while stopping when there is no checking item. The checking item of the equipment is not displayed when stopping.
I	[閉じる] button	The check item list screen is shut, and it returns to the main screen(3).

## 3.6 Check item list screen (selection equipment)

It is a screen where the checking item of the selected equipment is displayed.

Figure 3.6 Check item list screen (selection equipment)



Table 3.6 Check item list screen (selection equipment)

Sign	Nome	Description
A	[結果送信] button	The result transmission screen(4) is displayed.
B	[点検項目一覧] button	The check item list screen(5) is displayed.
C	[申し送り一覧] button	The message list screen(6) is displayed.
D	[表示切替] button	The check item list screen is moved to the right side, and the camera shot is displayed left. It returns to former position when [表示切替](display switch) button is clicked again.
E	[クリア] button	The [基本項目](basic item) or [今回値](this time value) of checking item of equipment is cleared.
F	[今回値] field	This time check value is input. When the value is not input, it is displayed in yellow. When the value in the standard is input, it is displayed in light blue.

Sign	Nome	Description
		When the value that exceeds the standard is input, it is displayed in red.
G	[起動中。点検作業あり](operating: There is check work) button	Equipment is started, and the stop is switched. It does while stopping when there is no checking item. The checking item of the equipment is not displayed when stopping.
H	[停止中。点検作業なし](stopping: There is no check work) button	The check item list screen is shut, and it returns to the main screen(3).

## 3.7 Message list screen

It is a screen where the message list of all equipment is displayed and a new message is input.

Figure 3.7 Message list screen

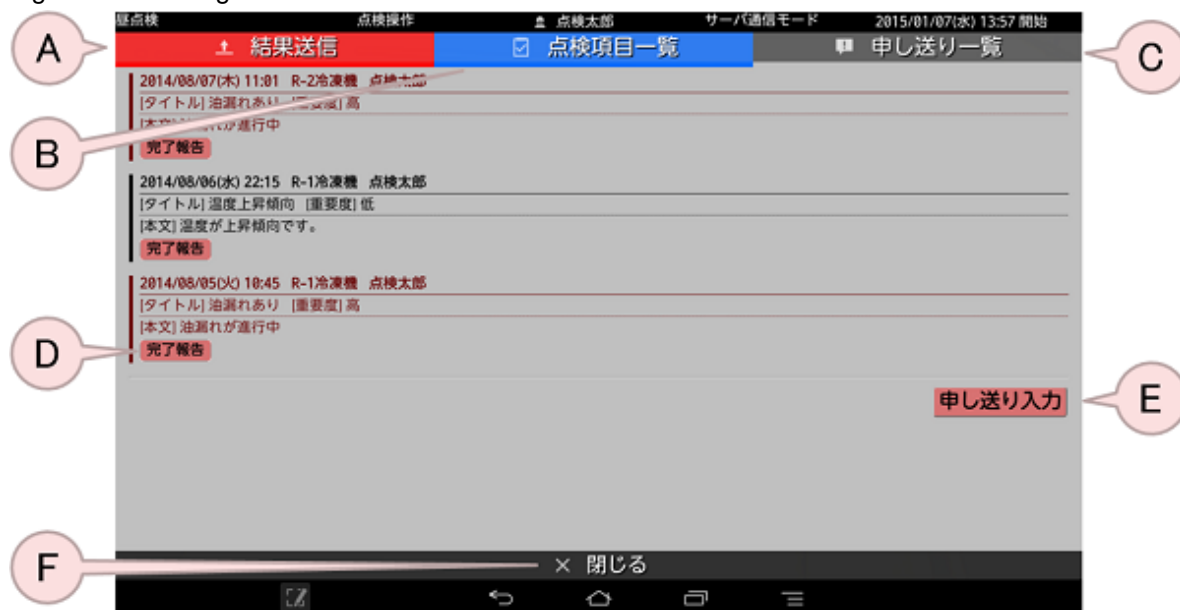


Table 3.7 Message list screen

Sign	Name	Description
A	[結果送信] button	The result transmission screen(4) is displayed.
B	[点検項目一覧] button	The check item list screen(5) is displayed.
C	[申し送り一覧] button	The message list screen(6) is displayed.
D	[完了報告] button	The message completion report screen(10) is displayed.
E	[申し送り入力] button	The message addition screen(7) is displayed.
F	[閉じる] button	The message list screen is shut, and it returns to the main screen(3).

## 3.8 Message addition screen (all equipment)

It is a screen where the equipment of the object is selected from all equipment, and message is added.

Figure 3.8 Message addition screen (all equipment)

The screenshot shows a mobile application interface for adding a message. At the top, there is a status bar with the text '申し込み入力' in green. Below it is a header bar with two buttons: '登録' (Register) and 'キャンセル' (Cancel). The main form consists of four rows: 1. '対象機器' (Target equipment) with a pull-down menu showing '選んでください' (Please select). 2. 'タイトル [20文字まで]' (Title [up to 20 characters]) with a text input field. 3. '申し送り内容 [30文字まで]' (Handover content [up to 30 characters]) with a text input field. 4. '重要度: 高' (Importance: High) with a checkbox. At the bottom, there is a navigation bar with a close button labeled '閉じる' (Close) and other standard mobile OS icons. Callouts A through G point to specific elements: A points to the pull-down menu, B to the title input field, C to the content input field, D to the checkbox, E to the '登録' button, F to the 'キャンセル' button, and G to the '閉じる' button.

Table 3.8 Message addition screen (all equipment)

Sig n	Name	Description
A	[対象機器] pull-down menu	The object equipment that adds message is selected.
B	[タイトル] field	The title of the added message item is input.
C	[申し送り内容] field	The content of the added message item is input.
D	[重要度] check box	It checks it for "Height" the importance of the added message item. When "高"(Height) is set, the message item is displayed in red.
E	[登録] button	The input content is registered, and it returns to the main screen(3).
F	[キャンセル] button	The input content is canceled, and it returns to the main screen(3).
G	[閉じる] button	The message addition screen is shut, and it returns to the main screen(3).

### 3.9 Message addition screen (selection equipment)

It is a screen where the message of the selected equipment is added.

Figure 3.9 Message addition screen (selection equipment)

The screenshot shows a mobile application interface for adding a message. At the top, there is a header bar with the text '申し送り入力' in green. Below this, there are two buttons: '登録' (Register) and 'キャンセル' (Cancel). The main form consists of several fields: '対象機器' (Target Equipment) with the value 'R-1冷凍機', 'タイトル [20文字まで]' (Title [up to 20 characters]), '申し送り内容 [30文字まで]' (Message Content [up to 30 characters]), and '重要度: 高' (Priority: High) with a checkbox. At the bottom, there is a navigation bar with a '閉じる' (Close) button. Callouts A through G point to specific elements: A points to the '対象機器' field, B points to the 'タイトル' field, C points to the '申し送り内容' field, D points to the '重要度: 高' checkbox, E points to the '登録' button, F points to the 'キャンセル' button, and G points to the '閉じる' button.

Table 3.9 Message addition screen (selection equipment)

	Name	Description
A	対象機器	The object equipment that adds the message is displayed.
B	[タイトル] field	The title of the added message item is input.
C	[申し送り内容] field	The content of the added message item is input.
D	[重要度] check box	Check it for "Height" the severity of the added message item. When "高" is set, the message item is displayed in red.
E	[登録] button	The input content is registered, and it returns to the main screen(3).
F	[キャンセル] button	The input content is canceled, and it returns to the main screen(3).
G	[閉じる] button	The message addition screen at each equipment is shut, and it returns to the main screen(3).

## 3.10 Message completion report screen

It is a screen where the completion report is done to the message.



Figure 3.10 Message completion report screen

The screenshot shows a mobile application interface for reporting message completion. At the top, a red header bar contains the text "申し送り完了報告入力". Below this is a form with several fields and buttons. Callouts A through I point to specific elements:

- A**: Points to the "対象機器" (Target Equipment) field, which contains "R-1冷凍機".
- B**: Points to the "タイトル" (Title) field, which contains "温度上昇傾向".
- C**: Points to the "申し送り内容" (Message Content) field, which contains "温度が上昇傾向です。".
- D**: Points to the "重要度" (Importance) field, which contains "低".
- E**: Points to the "完了報告 [30文字まで]" (Completion Report [Up to 30 characters]) field, which contains "確認中".
- F**: Points to the "登録" (Register) button.
- G**: Points to the "キャンセル" (Cancel) button.
- H**: Points to the "報告取消" (Report Cancel) button.
- I**: Points to the "閉じる" (Close) button in the bottom navigation bar.

Table 3.10 Message completion report screen

	Name	Description
A	対象機器	The object equipment that adds the message is displayed.
B	タイトル	The title of the message item is displayed.
C	申し送り内容	The content of the message item is displayed.
D	重要度	The importance of the message item is displayed.
E	[完了報告] field	The completion report of message is input.
F	[登録] button	The input content is registered, and it returns to the main screen(3). It keeps being displayed on lower right and the message list screen of the main screen until the result is transmitted. The display disappears when the result is transmitted.
G	[キャンセル] button	The input content is canceled, and it returns to the (3) main screen.
H	[報告取消] button	The registered message completion report is canceled. When the message completion report has registered, it is displayed.
I	[閉じる] button	The message completion report screen is shut, and it returns to the main screen(3).

## Chapter 4 Customizing procedure of checking application

The AR Checking Application can customize the property of the check scenario etc.

This section describes the customizing procedure of the checking application.

The setting of each customizing item is applied to each screen of the AR checking application as shown in the table below:

Table 4.1 Customized item, screen and part

Customized item	customized screen	Customized part
4.1 Customizing of check scenario	3.1 Check scenario selection screen 3.3 Main screen	[シナリオ選択](Scenario selection) pull-down menu
4.2 Customizing of scene	3.3 Main screen	[シーン切替](switch of scene) button
4.3 Customizing of user-defined tables	3.2 Worker selection screen 3.3 Main screen 3.4 Result transmission screen 3.5 Check item list screen (all equipment) 3.6 Check item list screen (selection equipment) 3.7 Message list screen 3.8 Message addition screen (all equipment) 3.9 Message addition screen (selection equipment) 3.10 Message completion report screen	
4.4 Customizing worker's information	3.2 Worker selection screen 3.3 Main screen 3.4 Result transmission screen 3.7 Message list screen	[作業者選択](user select) pull-down menu
4.5 Customizing of equipment information	3.3 Main screen 3.4 Result transmission screen 3.5 Check item list screen (all equipment) 3.6 Check item list screen (selection equipment) 3.7 Message list screen 3.8 Message addition screen (all equipment) 3.9 Message addition screen (selection equipment)	Display panel of equipment environment
4.6 Customizing of check item	3.5 Check item list screen (all equipment) 3.6 Check item list screen (selection equipment)	Check item, Check value type, etc.

## Information

---

The message information will not be displayed from next time by sending the completion report.

The check result is accumulated on DB though is used only the last value by the checking application.

The function to delete the message and the check result is not prepared.

Delete from the AR data management console or make the program for the deletion and delete it regularly when you want to delete these.

---

## 4.1 Customizing of check scenario

---

The scenarios in the following are registered in the initial state in the checking application.

Scenario ID	Scenario name	Description
500	Daytime checking	Daytime checking #tenken#
700	Nighttime checking	Nighttime checking #tenken#

### 4.1.1 Register scenarios

---

Examine the following items when you register scenario information.

The input is indispensable to the item shown by "\*".

**Scenario name \***

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for the character string length of the scenario name.

**Scenario ID \***

This value cannot be revised.

When the scenario is selected, it is displayed in ascending order of scenario ID.

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for the range of specification of scenario ID.

**Description \***

Add the character string "#tenken#" to the scenario used by the checking application.

The procedure to register the scenario is as follows:

1. Access the data management console, select the [Scenario Management] tab.
2. Click [add] on the scenario list screen.
3. In the [Add Scenario] dialog box, enter the scenario data, and then click [OK].

### 4.1.2 Edit scenarios

---

The procedure to edit the scenario is as follows:

1. Access the data management console, Select the [Scenario Management] tab.
2. In the [Scenario list], select the scenario, and then click [Edit].
3. In the [Edit Scenario] dialog box, revise the applicable content, and then click [OK].

### 4.1.3 Delete scenarios

---

The procedure to delete the scenario is as follows:

1. Access the data management console, Select the [Scenario Management] tab.

2. In the [Scenario list], select the scenario, and then click [Delete].
3. In the Remove dialog box, click [OK].



### Note

If a scenario is deleted, all scenes and AR overlay definitions associated with that scenario will also be deleted.

Even if the scenario is deleted, the check item etc. that linked deleted scenario is not deleted. Therefore, delete it from the user-defined table.

## 4.2 Customizing of scene

The scenes in the following are registered in the initial state in the checking application.

Table 4.2 Daytime checking

Scene ID	Scene name	Description
10	点検操作	The check result and the message are input. #MSG# #TENKEN#
20	点検方法説明	The explanation of the check method is displayed.

Table 4.3 Nighttime checking

Scene ID	Scene name	Description
15	点検操作	The check result and the message are input. #MSG# #TENKEN#
25	点検方法説明	The explanation of the check method is displayed.

### 4.2.1 Register scenes

Examine the following items when you register scene information.

The input is indispensable to the item shown by "\*"

The scene is not possible to share by each scenario, because it is defined in the scenario. Therefore, define each scenario even if it is same scene ID and a scene name.

#### Scene ID \*

It changes in ascending order of scene ID when the scene is switched by the checking application.

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for the range of specification of scene ID.

#### Scene name \*

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for the character string length of the scene name.

#### Description

Add the character string "#MSG#" to the scene that displays the overlay as for the message.

Add the character string "#TENKEN#" to the scene that displays the overlay as for asset information.

The procedure to register the scene is as follows:

1. Access the data management console, Select the [Scenario Management] tab.
2. In the [Scenario list], select the name of the scenario that the scenes will be added to.
3. In the [Scene list], click [add]
4. In the [Add Scene] dialog box, enter the scene data, and then click [OK].

## 4.2.2 Edit scenes

---

The procedure to edit the scene is as follows:

1. Access the data management console, Select the [Scenario Management] tab.
2. In the [Scenario list], select the scenario.
3. In the [Scene list], select the scene, and then click [Edit].
4. In the [Edit Scene] dialog box, revise the applicable content, and then click [OK].

## 4.2.3 Delete scenes

---

The procedure to delete the scene is as follows:

1. Access the data management console, Select the [Scenario Management] tab.
2. In the [Scenario list], select the scenario.
3. In the [Scene list], select the scene, and then click [Delete].
4. Click [OK].



### Note

.....  
If a scene is deleted, the AR overlay definition associated with that scene will also be deleted.  
.....

## 4.3 Customizing of user-defined tables

---

Information on equipment to be checked and information on the check result etc. are defined in the user-defined table.

Add, change and delete information according to the checking.

Refer to "[Appendix A Data item list of user-defined table](#)" for the definition item of the following each table.

Table 4.4 User-defined tables

User-defined table name	Defined information	Customizable
asset	Information on equipment	Yes
userdata	Worker's information	Yes
tenkentable	Information on check item	Yes
messageevent	Information on message	No
tenkenevent	Information on the check result	No

Using the data management console, create, edit and delete user-defined table:

1. Access the data management console, Select the [Data Management] tab, and then select [User-defined Table].
2. Select the user-defined table.

Refer to "FUJITSU Software Interstage AR Processing Server V1 Operator's Guide" for details.

## 4.4 Customizing worker's information

---

Worker's information on the checking application can be customized.

Access the data management console, select the [Data Management] tab, and then select [User-defined Table], and select [userdata].

## 4.4.1 Registrar worker's information

---

Examine the following items when you register worker's information.

The character string in parentheses is a column name of corresponding [userdata].

The input is indispensable to the item shown by "\*".

Worker name (username) \*

It is a name of the worker displayed on the beginning screen of the checking application. Specify a unique character string.

Worker ID (userid) \*

Specify a unique number that does not overlap with other worker ID.

Scenario ID (ScenarioId) \*

It is set in default as follows:

- Daytime checking : 500
- Nighttime checking : 700

When "0" is specified, the worker can execute all registered scenarios.



### Information

It becomes one or all either of enforceable when there are three scenarios or more.

Walker sort order (SortIndex)

When the worker is selected, the order by which the name of the worker is displayed can be specified.

- It is displayed in order with small value.
- It is displayed at the end when a minus value is input and there is no input.
- Input the value of the position to be added compared with other check items.

The procedure to register worker's information is as follows:

1. In the user-defined table list, select the [Userdata], and then click [Add].
2. In the displayed dialog box, input the information, and then click [OK].

## 4.4.2 Edit worker's information

---

The procedure to edit worker's information is as follows:

1. In the user-defined table list, select the [userdata].
2. In the check box, check the information to be edited, click [Edit].
3. In the displayed dialog box, edit the information, and then click [OK]

## 4.4.3 Delete worker's information

---

The procedure to delete worker's information is as follows:

1. In the user-defined table list, select the [userdata].
2. In the check box, check the information to be deleted, click [Delete].
3. In the displayed dialog box, click [OK]

# 4.5 Customizing of equipment information

Equipment information on the checking application can be customized.

Access the data management console,select the [Data Management] tab, and then select [User-defined Table], and select [asset] when customizing it.

## 4.5.1 Registrar quipment information

Examine the following items when you register equipment information.

The character string in parentheses is a column name of corresponding [asset].

The input is indispensable to the item shown by "\*".

Equipment name (assetname) \*

It is an equipment name to be checked. Specify a unique character string. When the marker is transferred, it is omitted for 20 characters or more.

 Example

.....  
equipment A  
.....

Equipment ID(assetid) \*

Specify a unique character string. This equipment ID uses [4.6 Customizing of check item](#).

 Example

.....  
asetA  
.....

Description (description)

It is description of equipment.

Marker ID (markerid) \*

It is marker ID corresponding to equipment.

When the tablet is held up in the marker specified here, equipment information is displayed. Specify a unique value.

 Example

.....  
20  
.....

Marker name (markername) \*

Specify a unique character string.

 Example

.....  
a1  
.....

Check input icon information (tenkenICON)

Specify the display of "Check input" icon of the thumbnail screen.

When it does not specify, the icon name of default is displayed.

When "none" is specified, the icon is not displayed.

#### Message addition icon information (msgICON)

Specify the display of "Message addition" icon of the thumbnail screen.

When it does not specify, the icon name of default is displayed.

When "none" is specified, the icon is not displayed.

#### Graph thumbnail URL (imageURL)

Specify URL of the image displayed in the graph thumbnail area of the equipment of the thumbnail screen.

When it does not specify, the graph is not displayed.

#### Check graph URL (graphURL)

Add the graph icon to the thumbnail screen.

When it does not specify or "None" is specified, the icon is not displayed.

Delimit by the semicolon, and specify the value as follows:

```
Icon name;Graph data URL
```



#### Example

Specification example

```
Check graph;http://192.0.2.0:8080/graph/data/r1.png
```

#### Additional icon information (starts by "Icon")

Specify the icon added to the thumbnail screen.

Delimit by the semicolon, and specify the value as follows:

```
Icon name;Icon image file name;Open file name at icon tap
```

When the attribute name that starts by "Icon" is defined, and the value is specified in the form of the above-mentioned, worth of the number an icon is displayed on the thumbnail screen.

When it does not specify, the icon is not displayed.

Select the icon image file name used by the offline environment from the list in "[Appendix B Icon list that can be used by additional icon information](#)".

When you do not specify the icon image file name (For example, "icon name;;Open file name at icon tap"), the icon image of default is displayed. (Refer to "[Appendix B Icon list that can be used by additional icon information](#)")



#### Example

Specification example (Attribute name is "icon1")

```
Manual;image/icon-dark/xdpi/manual.png;http://192.0.2.0:9102/arsvfdm/file/1420684291202398/manual.pdf
```

The procedure to register equipment information is as follows:

1. In the user-defined table list, select the [asset], and then click [Add].
2. In the displayed dialog box, input the information, and then click [OK].

## 4.5.2 Edit quipment information

The procedure to edit equipment information is as follows:



1. In the user-defined table list, select the [asset].
2. In the check box, check the information to be edited, click [Edit].
3. In the displayed dialog box, input the information, and then click [OK].



#### Note

Change the corresponding section of the check item at the same time when you change "assetid".

### 4.5.3 Delete equipment information

The procedure to delete equipment information is as follows:

1. In the user-defined table list, select the [asset].
2. In the check box, check the information to be deleted, Click [Delete].
3. In the displayed dialog box, click [OK].



#### Note

Confirm "Assetid" to be deleted is not used.

When it is used, Delete the check item that ID is set to "assetid" of "tenkentable", and then delete the equipment information.

## 4.6 Customizing of check item

Access the data management console, select the [Data Management] tab, and then select [User-defined Table], and select [tenkentable], then the check item can be added, be changed, and be deleted.

### 4.6.1 Add check item

When the check item is added to "Equipment A", the following tables are added.

Examine the following items when you customize the check item.



#### Example

Table 4.5 Example of added check table

Item name		This time value	Last value	Judgment standard etc.
EquipmentA-1	Temperature	<number>		Unit = °C [60 or less]
	Pressure	<number>		Unit = Mpa [0.5 ± 0.2]
EquipmentA-2	Temperature	<number>		Unit = °C [70~90]
	Pressure	<number>		Unit = Mpa [Pressure of Equipment A-1 ± 0.2]
Temperatures fluctuate of A-1 and A-2		<number>		Unit = °C [30 or less]
Allophone		<OK or NG>		Do not find abnormality

In the following explanations, the input is indispensable to the item shown by "\*".

#### 4.6.1.1 Check table

It is a common value as follows in each check item decided since [4.6.1.2 Group](#).

Input the same value when you register the check item.

The character string in parentheses is a column name of corresponding "asset".

Table name (TableName) \*

This is a table name displayed in the check item list.

The table name is displayed as follows:

- Each equipment name of the check result of result transmission screen
- Equipment name of the check result list screen



### Example

Equipment A

Table ID (TableId) \*

Specify ID to identify the table.



### Example

assetATable

Table sort order (SortIndexOfTable)

The order of the table displayed by the check item list is decided. It is displayed on in order with small value. It is displayed at the end when a minus value is input or it does not input. Input the value of the position to be added compared with other tables.



### Example

2

Stoppable (AssetStatusStoppable)

Specify the stoppable (The check is unnecessary) of the equipment.

When the equipment that can be stopped is done while stopping on the check input items screen, the check item is not displayed. Moreover, it is displayed on the result transmission screen, "STOP", and is transmitted the result of the halt condition.

Specify it by either the following.

- TRUE: It is possible to stop. (default)
- FALSE: It is impossible to stop.

Neither the capital letter nor the small letter are distinguished. When it does not specify or the mistake is found in a specified value, it operates by default.



### Example

TRUE

## 4.6.1.2 Group

Examine the following values when you register two or more check item as a group. The character string in parentheses is a column name of corresponding "asset".

Group name (RowGroupName)

It is a group item name displayed in the check table.

#### Group ID (RowGroupId)

It is ID of the group item.

#### Group sort order (SortIndexofRowGroup)

Decide order by which the group item is displayed in the table.

It is displayed on in order with small value. It is displayed at the end when a minus value is input or it does not input it. Input the position to be added compared with other group items.

Specify the same value for the item that belongs to the same group about [RowGroupName], [RowGroupId], and [SortIndexofRowGroup].



#### Example

Table 4.6 Example of group

	Group name (RowGroupName)	Group ID (RowGroupId)	Group sort order (SortIndexofRowGroup)	Item name
Group1	EquipmentA-1	assetA-1	10	Temperature
				Pressure
Group2	EquipmentA-2	assetA-2	20	Temperature
				Pressure
Group3			30	Temperatures fluctuate of A-1 and A-2
Group4			40	Allophone

It is shown that the blank space in the table does not input anything.

### 4.6.1.3 Check item

Examine the following values when you register content/ID the display as the check item. The character string in parentheses is a column name of corresponding "asset".

#### Check item name (RowName) \*

It is a check item name.

#### Check item ID (RowId) \*

It is a check item ID.

#### Check item sort order (SortIndexofRow) \*

Decide order by which the check item is displayed in the group item.

It is displayed on in order with small value. It is displayed at the end when a minus value is input or it does not input it. Input the position to be added compared with other check items.



#### Example

Table 4.7 Example of item

	Check item name (RowName)	Check item ID (RowId)	Check item sort order (SortIndexofRow)
Item1	Temperature	A-1_temperature	11
Item2	Pressure	A-1_pressure	12
Item3	Temperature	A-2_temperature	21
Item4	Pressure	A-2_pressure	22
Item5	Temperatures fluctuate of A-1 and A-2	A_differendce	31

	Check item name (RowName)	Check item ID (RowId)	Check item sort order (SortIndexOfRow)
Item6	Allophone	A_noise	41

In this example, the order of the display is set from item 1 in order of item 6.

#### 4.6.1.4 Check value type

Examine the following values when you register the type of the value input as a checking value. The character string in parentheses is a column name of corresponding "asset".

Value type (ValueType) \*

Select the type of the item as follows:

- NUMBER: Specify the item that inputs the numerical value.
- OKNG: Specify the item of the toggle button to input OK or NG.
- WEATHER: Specify the item of the toggle button that inputs either fine and cloudy weather, rain or the snow.
- STRING: Specify the item that inputs the character string.

Description (Description)

The description is displayed in "Judgment standard etc." row of the check table.



#### Example

Table 4.8 Example of value type

	Value type (ValueType)	Description
Item1	NUMBER	Unit = °C
Item2	NUMBER	Unit = Mpa
Item3	NUMBER	Unit = °C
Item4	NUMBER	Unit = Mpa
Item5	NUMBER	Unit = °C
Item6	OKNG	Do not find abnormality

In this example, it is set as an item to which the numerical value is input from item 1 to item 5 and an item to which item 6 inputs OK or NG.

#### 4.6.1.5 Verification of check value

When the value type is NUMBER, the verification that specifies upper bound/lower bound value of the input value is enforceable.

If the standard value is set, it becomes a verification of a relative upper bound/lower bound value from the standard value.

The standard value can specify not only the numerical value but also other check item ID(RowId).

High value (LimitHigh)

It is a high bound of the input value.

Low value (LimitLow)

It is a lower bound value of the input value.

Base value (LimitBase)

It is a base value of the input value.

The specification of the lower bound value and the upper bound value based on the value of the specified item to be checked is possible by specify RowId of other check items.

About the input method, Refer to [4.6.1.6 Verification of check value \(Since piece second\)](#).

The range of the verification is displayed in "Judgment standard etc." row of the value item according to the value specified that the check value verification is set.



## Example

### Example when check value of item is the following values

- Item 1:60 or less is a normal
- Item 2:0.5±0.2 is a normal
- Item 3:90 from 70 are normal
- Item 4:0.5±0.2 is a normal
- Item 5:30 or less is a normal

The input column is displayed in blue when the check value is a range of the verification, and it is displayed, except for the range in red.

	High value LimitHigh)	Low value (LimitLow)	Base value (LimitBase)
Item1	60		
Item2	0.2	0.2	0.5
Item3	90	70	
Item4	0.2	0.2	A-1_pressure
Item5	30		
Item6			

## 4.6.1.6 Verification of check value (Since piece second)

Use the character (LimitValue1, LimitValue2, and LimitValue3, etc.) that starts by "LimitValue" of tenkentable when you want to add the verification besides the specified verification in [4.6.1.5 Verification of check value](#).

The setting method of the value is different from [4.6.1.5 Verification of check value](#). Specify it in the form of:  
"Low value;High value;Base value" or "Low value;High value;Base RowId"



## Example

- Example when range of From 8 to 14 is specified

8;14

- Example when range of 5±2

2;2;5

- Example when range of ±3 is specified based on "rlondo"

3;3;rlondo

It is displayed in blue only when all the verifications are executed when two more check value verifications are set to one check value, and it exists in all ranges of the verification.

It is feasible to add the attribute of [tenkentable] to add two more verifications.

In the user-defined table, check [tenkentable], and click [Edit], and add the attribute with a [Add].

Specify the character that starts by "LimitValue" (For example, "LimitValue1", "LimitValue2", "LimitValue3") for an attribute name.

#### 4.6.1.7 Automatic calculation of check value

Clause 2 of "Operation sign B of A" operation is specified, and the input value is automatically calculated from the value of other check items.

Calculation object 1 (Value1RowId)

Specify [RowId] of the item that becomes "Calculation object A".

Calculation object 2 (Value2RowId)

Specify [RowId] of the item that becomes "Calculation object B".

Operation sign (ValueOperator)

Specify either of arithmetic operations ( +, -, \*, / ) if necessary.



#### Example

Table 4.9 Example of specifying automatic calculation check value

	Calculation object 1 (Value1RowId)	Calculation object 2 (Value2RowId)	Operation sign (ValueOperator)
Item1			
Item2			
Item3			
Item4			
Item5	A-2_temperature	A-1_temperature	-
Item6			

In this example, when "22" is set in A-2\_temperature and "15" is set to A-1\_temperature, the automatic calculation of check value of Item5 is 7.

#### 4.6.1.8 Check type

Equipment ID(AssetId) \*

Input equipment ID of the equipment to be checked ("assetid" registered in [asset] of the user-defined table).

Input value storage location (DataEntryName) \*

Specify the storage location of the check data.

Specify either of F01-F05 when you specify NUMBER by the check value type.

Specify S01-S05 when specifying it excluding NUMBER by the check value type.

Check type (TenkenType) \*

Set the character string to identify it when you specify two or more input value storage places.

The data input by the check is registered in the data base as each value of the check type. Ten check values or less of five numerical values (F01-F05) and five character strings (S01-S05) can be stored in one check type.

Specify where to store each check input value.

It does not enter one check type when there are 5 numeric values or character strings or more. In that case, set two or more check types. Refer to [tenkentable] for details.



## Example

Table 4.10 Example of check type

	Equipment ID (AssetId)	Check type (TenkenType)	Input value storage place (DataEntryName)
Item1	assetA	assetA-1Tenken	F01
Item2	assetA	assetA-1Tenken	F02
Item3	assetA	assetA-2Tenken	F01
Item4	assetA	assetA-2Tenken	F02
Item5	assetA	assetATenken	F01
Item6	assetA	assetATenken	S01

In this example, Item1 and Item2 are stored to F01 and F02 of "assetA-1Tenken", and Item3 and Item4 are stored to F01 and F02 of "assetA-2Tenken" and Item5 and Item6 are stored in F01 and S01 of "assetATenken" respectively.

### 4.6.1.9 Reflection of the last value

Reflection of the last value (SetLastData)

Specify it by either the following.

- TRUE: The last value is set and displayed in this time value.
- FALSE: The value is displayed by the value none or an initial this time value. (default)

Neither the capital letter nor the small letter are distinguished. When it does not specify or the mistake is found in a specified value, it operates by default



## Example

Table 4.11 Example of reflection of the last value

	Reflection of the last value (SetLastData)
Item1	FALSE
Item2	FALSE
Item3	FALSE
Item4	FALSE
Item5	FALSE
Item6	TRUE

In this example, the last value is set to this time value of Item6 when beginning to check.

### 4.6.1.10 Order of outputting CSV file

Order of outputting CSV file (TargetNo)

The CSV file is output by using CSV output command (Refer to [Chapter 5 Output of check result](#)).

Specify the order of the row of the CSV file.

The output display is done in order with small value. When the value is not input or 0 is input, it is not output to the CSV file.

It is displayed on in order with small value. It is displayed at the end when a minus value is input or it does not input it. Input the position to be added compared with other check items.



## Example

Table 4.12 Example of order of outputting CSV file

	CSV output setting (TargetNo)
Item1	11
Item2	12
Item3	13
Item4	14
Item5	15
Item6	16

In this example, it is output from Item1 to Item6.

### 4.6.1.11 Nullification of check item

#### Disable (Disable)

The check item can be nullified.

It is not displayed in the check item list when nullifying it.

Specify TRUE when you nullify the check item.



## Example

Table 4.13 Example of Disable

	Disable (Disable)
Item1	
Item2	
Item3	TRUE
Item4	
Item5	
Item6	

In this example, Item3 is not displayed.

### 4.6.1.12 Scenario ID

#### Scenario ID (Scenariold) \*

Specify scenario ID that uses check table.

The item can be used by setting 0 to scenario ID in all scenarios.



## Example

Table 4.14 Example of scenario ID

	Scenario ID (Scenariold)
Item1	500



	Scenario ID (Scenarioid)
Item2	500
Item3	500
Item4	500
Item5	500
Item6	500

In this example, 500 is set from Item1 to scenario ID of Item6.

## 4.6.2 Register check item

The procedure to register the check item is as follows:

1. Access the data management console, select the [tenkentabl] in the user-defined table list.
2. Click [Add], and input the information in the displayed dialog box, and then click [OK].

Repeat this procedure about the item to be added.

## 4.6.3 Edit check item

The procedure to edit the check item is as follows:

1. In the user-defined table list, select the [tenkentabl].
2. Select the item to be edited, click [Edit].
3. In the displayed dialog box, edit the item, and then click [OK].

Repeat the above-mentioned procedure about the item to be edited.



### Note

When table name (TableName) and group item name (RowGroupName), etc. are edited, it is necessary to edit all items for which the same value is used.

Confirm whether to use it in upper bound value (LimitHigh) and lower bound value etc. (LimitLow) of other check items when you edit item ID (RowId), edit other check items if necessary.

## 4.6.4 Delete check item

The procedure to delete the check item is as follows:

1. In the user-defined table list, select the [tenkentabl].
2. Select the item to be deleted, Click [Delete].
3. In the displayed dialog box, click [OK]

Repeat the above-mentioned procedure about the item to be deleted.



### Note

Confirm whether to use check item ID (RowId) to be deleted in upper bound value (LimitHigh) and lower bound value (LimitLow) of other check items, edit other check items if necessary.

## Chapter 5 Output of check result

This chapter describes the command that outputs definition information and the check result of storage in the AR execution server to CSV file for graph and form.

Set the installation destination of Java to environment variable JAVA\_HOME of the execution environment before executing the check result output command.

Each value in the output CSV file is delimited by the comma, and enclosed with a double quotation. A double quotation is not output when not worth.

The encode of the CSV file is UTF-8. The line feed code is CRLF (default value of operation OS).

### 5.1 Check result output command

This section describes the check result output command.

#### Function

The data of the check result table and the message table is output to the CSV file within the specified range of the date.

Moreover, what customized to use it as input data for the form making and the graphical representation can be output to the CSV file.

#### Syntax

```
loadtenkendata.bat <Server name> <Port number> <Output path> <Start date> {<End date> <Output item  
configuration file> <Date output configuration file> Options}
```

- <Server name>: Specify the server name or Internet Protocol address of R execution server.
- <Port number>: Specify the port number of AR execution server Web container function (REST API).
- <Output path>: Specify the path name that becomes a destination of the output of the CSV file by the absolute path.
- <Start date>: Specify the oldest date in the acquired data for an start date by the yyyyymmdd form.
- <End date>: Specify the newest date in the acquired data for an end date by the yyyyymmdd form.
- <Output item configuration file>: Specify the output item configuration file name by the absolute path with <output>.
- configuration file of the date >.< Date output configuration file>: Specify the output configuration file name of the date by the absolute path with <output item configuration file>.
- <Options>: Specify the option with <End date>, <Output item configuration file>, and <output configuration file of the date>.



#### Note

- The item specified by <Output configuration file of the date> is output after the item specified by <Output item configuration file>.
- When <End date> is omitted, the data only of the date specified by <Start date> is output.
- The following file names have not already been used by the AR checking solution, and do not use it as <Output item configuration file> and <Output configuration file of the date>.
- basedatamap.csv
- messagedatamap.csv
- tenkendatamap.csv

#### Method of making output item configuration file

Set the header of the CSV file to the output item configuration file.

The CSV file can be used as a form output of the graphical representation and the check result.

- Specify it by CSV (Comma Separated Value).
- Make the character-code UTF-8(BOM none).
- The line that starts by "#" is considered to be a comment.
- The first line is a header. Do not change.
- Set the output item since the second line.
- Specify the value set to "RowId" of the QAttribute name of the check item management table for the first row.
- Specify the character string that outputs as a header for the second row. Set the display item along the output form of the tool for the form and the graph (character number limitation and data type).

## Method of making date output configuration file

Set the header of the CSV file to the date output configuration file.

- Specify it in the form of key=value.
- Make the character-code UTF-8(BOM none).
- Combine and specify the following character strings. Distinguish the capital letter and the small letter. Select the output form according to the cooperating application.
  - yyyy: Age at Christian era (four digits)
  - yy: Age at Christian era (last 2 digits)
  - MM: Month
  - dd: Day
  - EEEE: A day of the week (long form)
  - EE: A day of the week (short form)
  - HH: Hour
  - mm: Minute
  - ss: Second
- When the combination of the value of "key" and "value" is not described in the date output configuration or changing line is input just behind "key=", the item is not output.
- When you specify "M", "d", "H", "m", and "s" output format of "Moon", "Day", "Time", "Worth", and "Second", One place value character is displayed by one digit.



## Example

Output example at 1:23:45, May 31, 2014

Specified form	Output result
yyyy/MM/dd	2014/05/31
yyyy-MM-dd	2014-05-31
yyyyMMdd	20140531
yy/MM/dd	14/05/31
MM-dd	05-31
yyyy年MM月dd日 EEEE	2014年05月31日 土曜日
yyyy/MM/dd(EE) HH:mm:ss	2014/05/31(土) 01:23:45
HH時mm分	01時23分

Specified form	Output result
yyyy/M/d(EE) H:m:s (*)	2014/5/31(土) 1:23:45

## Options

Specify the option following after all parameters. The specified order of the option is arbitrary.

Neither the capital letter nor the small letter are distinguished in the the option.

### scenarioId (Scenario ID specification)

Specify scenario ID in the form of "scenarioId=nnnn" ("nnnn" is an integer of 1-9999).

When this option is specified, the data that scenario ID is a specified value or 0 is output.

When this option is not specified, the data of all scenarios is output.

### usegivenmap (Use of existing output item map file)

"Output item map file" is generated from the tenkentable and the output item configuration file automatically at execution. And, the CSV file is output according to the file.

When this option is specified, the output item map file is not generated automatically. The output item map file made beforehand is used. It is necessary to store the output item map file in the following directories before it executes it. Neither the arrangement destination nor the file name are revokable.

#### Storage location of output item map file

*Directory at output specified by argument destination\tenkendatamap.csv*

#### Outline of output item map file

The first line is a header.

The following of each check item are described since the second line.

- Combination of values to specify record uniquely
- Item (QAttribute) name where check item is stored
- Item name output to CSV file (arbitrary name)

### ssl (Use of SSL)

When this option is specified, it connects to the server with HTTPS.

When this option is not specified, it connects to the server with HTTP.



## Example

- The data March 1, 2014 is output to c:\artenken

```
> loadtenkendata 192.0.2.0 9102 c:\artenken 20140301
```

Output file name: tenkendata\_20140301.csv

- The data from March 1, 2014 to March 31, 2014 is output to c:\artenken

```
> loadtenkendata 192.0.2.0 9102 c:\artenken 20140301 20140331
```

Output file name: tenkendata\_20140301\_20140331.csv

- The data from March 1, 2014 to March 31, 2014 is output to c:\artenken in the content set to output item configuration file (c:\artenken\_settings\tenken.csv) and date output configuration file (c:\artenken\_settings\tenken.ini)

```
> loadtenkendata 192.0.2.0 9102 c:\artenken 20140301 20140331 c:\artenken_settings\tenken.csv c:\artenken_settings\tenken.ini
```

Output file name: tenkendata\_20140301\_20140331.csv

.....

## Chapter 6 Display of graph

This chapter describes the procedure for displaying the graph as for the check result.

It cooperates with Interstage Business Process Manager Analytics V12 to display the graph.

### 6.1 Definition files

The following definition files (sample) are used.

- Definition files of the check result output command
  - GRP\_item.csv
  - GRP\_date.ini
  - messedatamap.csv
- Graph output definition file(for Interstage Business Process Manager Analytics)
  - artenkendef.aar

### 6.2 Setting of Interstage Business Process Manager Analytics

Setup steps of Interstage Business Process Manager Analytics are as follows:

1. In the management console of Analytics, Make the sensor and start.  
Refer to "Interstage Business Process Manager Analytics V12 Management Console Guide" for details.
  - Set "arnuma\_csv" to the name.
  - Set "Text" to the kind of the system for the watch.
2. In the management console of Analytics, make user "user001" for the check system, and Allocate group "Administrator User".  
Refer to "Interstage Business Process Manager Analytics V12 Management Console Guide" for details.
3. In the Analytics Studio, Import the definition file of the graph output  
Refer to "Interstage Business Process Manager Analytics V12 Studio Guide" for details.



#### Note

The directory of CSV file for the collection is defined "C:\artenkendata" and the file name (key word) is defined "tenkendata\_".  
Change the collection condition according to the directory and file name of output destination of the CSV file.

4. Begin to operate all the importing definitions.  
Refer to "Interstage Business Process Manager Analytics V12 Studio Guide" for details.

### 6.3 Setting of checking application to display the graph

#### 6.3.1 Definition of graph thumbnail URL

1. In the Analytics Studio, in "View profile" - "AR check system \_ thumbnail display" - "Direct display URL" tab, Copy URL of the check equipment.
2. Change "/dashboard/" to "/mobile/" in URL.
3. follow the procedure of [4.5.1 Registrar quipment information](#), register URL in thumbnail URL(imageURL) graph.



### Example

```
http://192.0.2.0:40330/ibpmm/mobile/Welcome?
menuType=kpi&viewProfileId=VPR_1J0SZAT57J&chartLayoutId=DLT_5T4SOHTUJI&hideheader=false
```

## 6.3.2 Definition of graph icon

1. In the Analytics Studio, in "View profile"->"AR check system \_ smart device display" - "Direct display URL" tab, Copy URL of check equipment.
2. Change "/dashboard/" to "/mobile/" in URL.
3. follow the procedure of arapp04.doc#add\_info, register the icon name and URL in check graph URL (graphURL).



### Example

```
check_graph;http://192.0.2.0:40330/ibpmm/mobile/Welcome?
menuType=kpi&viewProfileId=VPR_QN8INC5O3S&chartLayoutId=DLT_10EQGV1IAK&hideheader=false
```



### Note

When the graph is not correctly displayed on Internet Explorer, refer to the article "Problems with Dashboardto" in the troubleshooting in "Interstage Business Process Manager Analytics V12 Administration Guide".

## 6.4 Output of check data

Output the check data from the AR Processing server by executing the check result output command (loadtenkendata.bat) of the tool for the graph and the form.

Refer to "5.1 Check result output command" for the use of the command.



### Example

Item	Specified value
Host name or address of AR processing server	192.0.2.0
Port number of AR processing server	9102
Storage location of CSV file of AR check data	C:\artenkendata
Definition files of the check result output command	C:\artenkendata\GRP_item.csv
Date output configuration file of the check result output command	C:\artenkendata\GRP_date.ini
Output period of check data	2014/11/1 ~ 2014/11/1
Scenario ID of check data output object	500
Definition file of message output of the check result output command	C:\artenkendata\messagedatamap.csv

```
loadtenkendata.bat 192.0.2.0 9102 C:\artenkendata 20141101 20141101 C:\artenkendata\GRP_item.csv C:\
\artenkendata\GRP_date.ini scenarioId=500
```

Store the definition file of the message output of the check result output command in the same directory as the storage location of CSV file of AR check data. (In the above-mentioned example, "C:\archouhyou\csv")

## Point

.....

Execute loadtenkendra.bat with the Windows task scheduler etc. when you take out the check result regularly (et cetera during a day once)

.....



## Chapter 7 Outputting forms of check result

This chapter describes the procedure when the check result is output to PDF file.

PDF file is output in cooperation with the following products.

- Interstage List Creator Enterprise Edition V10
- Interstage List Creator Designer V10

### 7.1 Definition files

The following definition files (samples) are used.

- Outputting forms of the check result output command  
FRM\_item.csv  
FRM\_date.ini  
messagedatamap.csv  
tenkendatamap.csv
- Form definition file (pump check table)(for Interstage List Creator)  
pumpTenkenSheet\_A

### 7.2 Setting of Interstage List Creator

Execute the following commands after setting Interstage List Creator.

```
prsetenvkey -a -labeldatamode 2
```

### 7.3 Output of check data and forms

1. Output the check data from the AR Processing server by executing the check result output command (loadtenkendata.bat) of the tool for the graph and the form.

Refer to "5.1 Check result output command" for the use of the command.



#### Example

Item	Specified value
Host name or address of AR processing server	192.0.2.0
Port number of AR processing server	9102
Storage location of CSV file of AR check data	C:\archouhyou\csv
Definition files of the check result output command	C:\archouhyou\csv\FRM_item.csv
Date output configuration file of the check result output command	C:\archouhyou\csv\FRM_date.ini
Output period of check data	2014/11/1 ~ 2014/11/7
Scenario ID of check data output object	500
Definition file of message output of the check result output command	C:\archouhyou\csv\messagedatamap.csv
Output item map file of the check result output command	C:\archouhyou\csv\tenkendatamap.csv

```
loadtenkendata.bat 192.0.2.0 9102 C:\archouhyou\csv 20141101 20141107 C:\archouhyou\csv  
\FRM_item.csv C:\archouhyou\csv\FRM_date.ini scenarioId=500 usegivenmap
```

Store the definition file of the message output of the check result output command in the same directory as the storage location of CSV file of AR check data. (In the above-mentioned example, "C:\archouhyou\csv")

2. Execute the PDF output command of the form, and output the form to PDF file.

Refer to "Interstage List Creator V10 **PDF変換機能編**" for details of prprint command.



## Example

Item	Specified value
Form name	pumpTenkenSheet_A
Form stored directory	C:\archouhyou\form
PDF file output destination	C:\archouhyou\pdf
CSV file name of AR check data	C:\archouhyou\csv\tenkendata.csv
Output period of check data	2014/11/1 ~ 2014/11/7

```
prprint pumpTenkenSheet_A -assetsdir C:\archouhyou\form -f C:\archouhyou\csv
\tenkendata_20141101_20141107.csv -indatacode UTF8 -atdirect file -keeppdf C:\archouhyou\pdf
\PumpCheckTable.pdf -s "20141101;20141107" -atlabeldata yes
```

## Appendix A Data item list of user-defined table

The data defined in user-defined table is as follows.

- asset(Equipment information table)
- messageevent(Message table)
- tenkenevent(Check result table)
- userdata(Walker management table)
- tententable(Check item management table)

Table A.1 User-defined table name : asset(Equipment information table)

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
1	assetid	STRING	Equipment ID	r1
2	assetname	STRING	Equipment name	R-1冷凍機
3	description	STRING	Description	R-1冷凍機です。
4	markerid	LONG	Marker ID	1
5	markername	STRING	Marker name	r1
6	tenkenICON	STRING	Check input icon information	
7	msgICON	STRING	Message addition icon information	
8	imageUrl	STRING	Graph thumbnail URL	http://192.0.2.0:40330/ibp...
9	graphURL	STRING	Check graph URL	
10	icon1	STRING	Additional icon information 1 (Even if it is undefined, it is operable.)	マニュアル;image/icon-dark/xdpi/manual.png;http://192.0.2.0:9102/arsvfdm/file/1420684291202398/manual.pdf
11	icon2	STRING	Additional icon information 2 (Even if it is undefined, it is operable.)	障害履歴;image/icon-dark/xdpi/maintenance-info.png;http://192.0.2.0:8080/tenken/maintenance.xls
12	icon3	STRING	Additional icon information 3 (Even if it is undefined, it is operable.)	在庫表;image/icon-dark/xdpi/stock-list.png;http://192.0.2.0:8080/tenken/stock.xls

Table A.2 User-defined table name : messageevent (Message table)

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
1	msgid	LONG	Message ID	1001
2	msgname	STRING	Message title	申し送り
3	description	STRING	Description	申し送りです。
4	registrationtime	LONG	Registration date and time	1407203111000
5	regDatetimeStr	STRING	Registration date and time (String format)	2014/08/05 10:45:11
6	registrant	STRING	Registrant name	点検太郎
7	markerid	LONG	Marker ID	1
8	markername	STRING	Marker name	r1

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
9	x	FLOAT	Coordinates information (X axis)	
10	y	FLOAT	Coordinates information (Y axis)	
11	z	FLOAT	Coordinates information (Z axis)	
12	targetassetid	STRING	Equipment ID of target	r1
13	title	STRING	Message title	油漏れあり
14	level	LONG	Message level	9
15	value	STRING	Message content	油漏れが進行中
16	occurrencetime	LONG	Event occurrence date and time	1407203111000
17	occDatetimeStr	STRING	Event occurrence date and time (String format)	2014/08/05 10:45:11
18	operator	STRING	Walker name	点検太郎
19	ScenarioId	LONG	Scenario ID	500
20	Enable	STRING	Display of message	true
21	Answer	STRING	Result report	

Table A.3 User-defined table name : tenkenevent (Check result table)

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
1	tenkenid	STRING	Check ID	1407330900000
2	tenkenname	STRING	Equipment name	R-1冷凍機、高圧盤
3	description	STRING	Description of equipment	
4	type	STRING	Type	RXTenkenYoruN
5	registrationtime	LONG	Registration date and time	1407330900000
6	regDatetimeStr	STRING	Registration date and time (String format)	2014/08/06 22:15:00
7	registrant	LONG	Registrant name	点検太郎
8	markerid	LONG	Marker ID	1
9	markername	STRING	Marker name	r1
10	targetassetid	STRING	Equipment ID	r1
11	assetstatus	STRING	State of beginning	START
12	occurrencetime	LONG	Check date and time	1407330900000
13	occDatetimeStr	STRING	Check date and time (String format)	2014/08/06 22:15:00
14	operator	STRING	Walker name	点検太郎
15	F01	FLOAT	Check item value FLOAT1	45.0
16	F02	FLOAT	Check item value FLOAT2	9.0
17	F03	FLOAT	Check item value FLOAT3	

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
18	F04	FLOAT	Check item value FLOAT4	
19	F05	FLOAT	Check item value FLOAT5	
20	S01	STRING	Check item value STRING1	
21	S02	STRING	Check item value STRING2	
22	S03	STRING	Check item value STRING3	
23	S04	STRING	Check item value STRING4	
24	S05	STRING	Check item value STRING5	
25	ScenarioId	LONG	Scenario ID	700

Table A.4 User-defined table name : userdata (Walker management table)

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
1	userid	LONG	Walker ID	1001
2	username	STRING	Walker name	点検太郎
3	SortIndex	LONG	Walker sort order	0
4	ScenarioId	LONG	Scenario ID	1100























Table A.5 User-defined table name : tenkentable (Check item management table)






No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
1	TableId	STRING	Equipment table ID	r1yoru
2	TableName	STRING	Equipment table name	R-1冷凍機、高圧盤
3	SortIndexOfTable	LONG	Table sort order	10
4	AssetStatusStoppable	STRING	Stoppable of equipment	TRUE
5	RowGroupId	STRING	Group ID	r1_reitouki
6	RowGroupName	STRING	Group name	冷凍機
7	SortIndexOfRowGroup	LONG	Group sort order	10
8	RowId	STRING	Check item ID	r1_oilhojyuu
9	RowName	STRING	Check item name	オイル補充
10	SortIndexOfRow	LONG	Check item sort order	10
11	ValueType	STRING	Check item value type	NUMBER
12	Description	STRING	Description (Displayed on screen)	単位=L
13	AssetId	STRING	Equipment ID	r1
14	TenkenType	STRING	Check type	RXTenkenYoru
15	DataEntryName	STRING	Input value storage location	F01
16	SetLastData	STRING	Reflection of the last value	FALSE
17	TargetNo	LONG	Order of outputting CSV file	10010
18	LimitLow	FLOAT	Low value	12.5

No.	Attribute name (Qattribute)	Data type	Meaning	Example of value
19	LimitHigh	FLOAT	High value	30.205
20	LimitBase	STRING	Base value	
21	Value1RowId	STRING	Calculation object 1 (It is "B" in case of "A=B-C")	
22	Value2RowId	STRING	Calculation object 2 (It is "C" in case of "A=B-C")	
23	ValueOperator	STRING	Operation sign (It is "-" in case of "A=B-C")	
24	Disable	STRING	Nullification item	
25	ScenarioId	LONG	Scenario ID	700

## Appendix B Icon list that can be used by additional icon information

It is the icon images of additional icon information that can be used by the off-line environment.

No.	Icon image	Icon image file name	Description
1		image/icon-dark/xdpi/accept.png	
2		image/icon-dark/xdpi/add-message.png	
3		image/icon-dark/xdpi/AF.png	
4		image/icon-dark/xdpi/check-list.png	
5		image/icon-dark/xdpi/close.png	
6		image/icon-dark/xdpi/cloud.png	
7		image/icon-dark/xdpi/discard.png	
8		image/icon-dark/xdpi/edit-check-list.png	
9		image/icon-dark/xdpi/edit.png	
10		image/icon-dark/xdpi/exchange.png	
11		image/icon-dark/xdpi/graph-reference.png	
12		image/icon-dark/xdpi/grid.png	
13		image/icon-dark/xdpi/list.png	Default
14		image/icon-dark/xdpi/live.png	
15		image/icon-dark/xdpi/maintenance-info.png	
16		image/icon-dark/xdpi/manual.png	
17		image/icon-dark/xdpi/message-list.png	
18		image/icon-dark/xdpi/overflow.png	
19		image/icon-dark/xdpi/pause.png	
20		image/icon-dark/xdpi/rain.png	
21		image/icon-dark/xdpi/refresh.png	
22		image/icon-dark/xdpi/setting.png	

No.	Icon image	Icon image file name	Description
23		image/icon-dark/xdpi/snow.png	
24		image/icon-dark/xdpi/stock-list.png	
25		image/icon-dark/xdpi/sun.png	
26		image/icon-dark/xdpi/upload.png	
27		image/icon-dark/xdpi/user.png	