SMART CONSTRUCTION Fleet User Guide 【Web Application】

Komatsu Smart Construction Promotion Division

KOMATSU

Contents

How to Use SMART CONSTRUCTION Portal

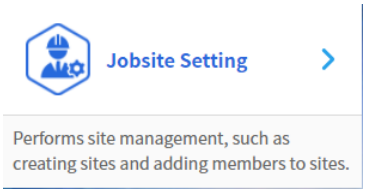
01

1. How to Use SMART CONSTRUCTION Portal

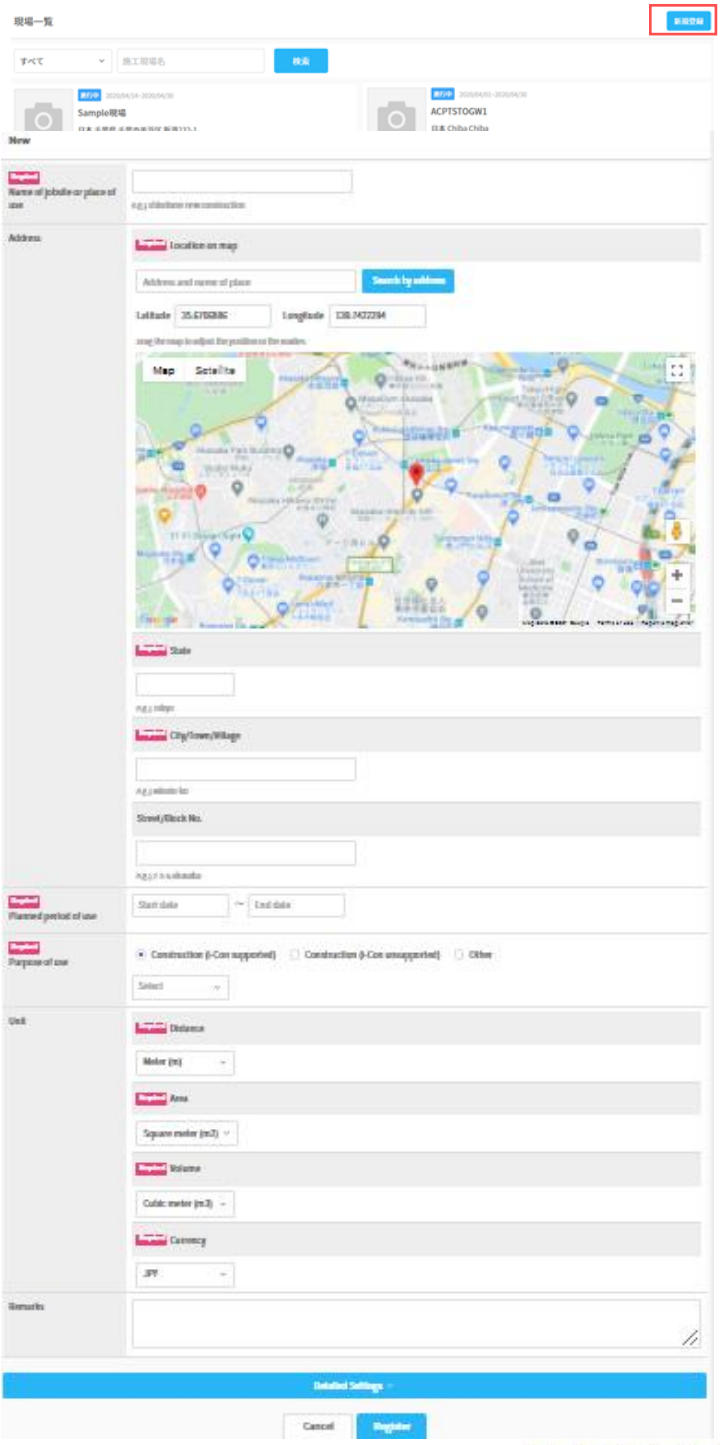
Individual representatives of companies need to create an account from the SMART CONSTRUCTION Portal in advance. To create an account, refer to the separate document.

→ Separate document: SMART CONSTRUCTION Operation Manual > Company and admin account registration
https://web.pf.sc-cloud.komatsu/kltd/manual/%E6%93%8D%E4%BD%9C%E3%83%9E%E3%83%8B%E3%83%A5%E3%82%A2%E3%83%AB.pdf

1. How to use SMART CONSTRUCTION portal



Site list



■ Creating and setting new jobsites

From Jobsite Setting, you can create and set new jobsites.

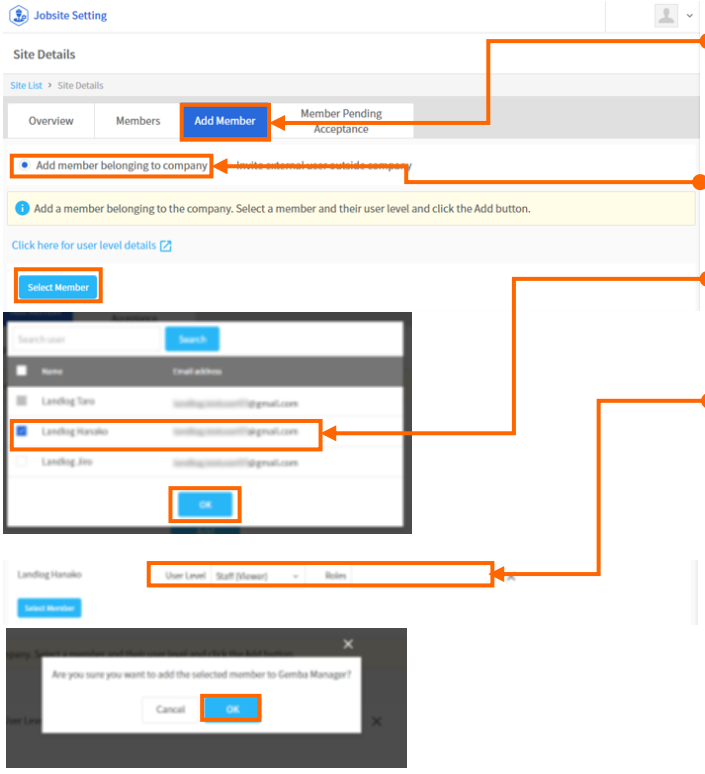
To create a new jobsite, you need to make entries in the fields indicated with Required .

! The jobsites having been created from Jobsite Setting can be used in common to other SMART CONSTRUCTION solutions.

If a jobsite has already been created for other solutions, you do not need to create a new jobsite.

1. How to use SMART CONSTRUCTION portal

■ Add a member belonging to a company to a site



- On the Site Details screen, click the Add Member tab.
- Select Add member belonging to company, and then click Select Member.
- Select a member that you want to add as a site member, click OK.
- Select a user level from the User Level drop-down list and, enter a role in the Roles field, as needed.

Jobsite Setting

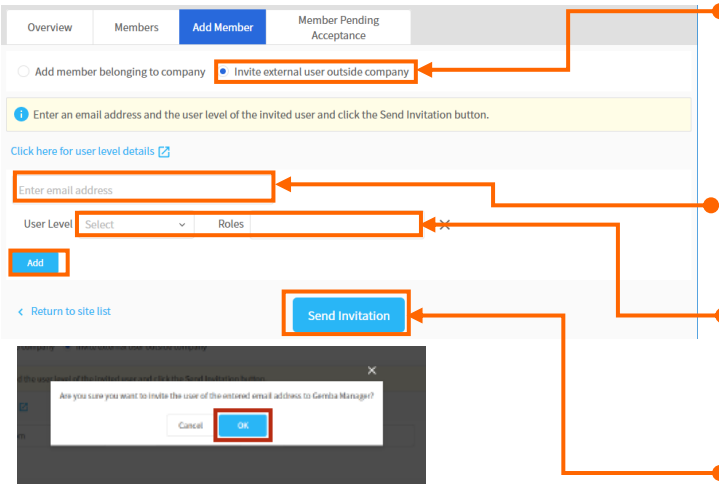
User level	Description	View	Write/Edit/Delete	Connect device	Manage site information or members
Site supervisor	Right to perform all operations including updating site information and inviting members.	✓	✓	✓	✓
Operator (Leader)	Right to create or update devices, channels, buckets, and geographic information except right to delete.	✓	✓	✓	
Operator (General)	Right to upload data (message data, file, and location information) and to create, update, or delete a file in file storage.	✓	✓		
Staff (Viewer)	Right to view or download data.	✓			

SC Fleet

Administrator
Viewer

A member whose user level is Site supervisor can add a member to a site.

■ Invite a user from outside company to a site



- Select Invite external user outside company on the Site Details screen.
  A field for entering an email address appears.
- Enter the email address of a user you want to invite.
- Select a user level from the User Level drop-down list and, enter a role in the Roles field, as needed.
- Click Send Invitation.

A user that you invite must already be registered as a SMART CONSTRUCTION member to join the site.

Overview of SMART CONSTRUCTION Fleet System

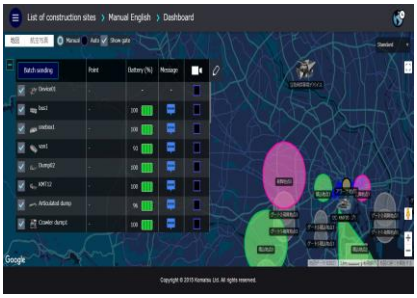
02

■2-1 System overview

Dynamics Management System that Komatsu Rolls Out

“SMART CONSTRUCTION Fleet” is an application that can share and manage information on the positions of dump trucks, excavators, or bulldozers.
By sing the “SMART CONSTRUCTION Fleet,” you can easily check the current progress of the construction work on a map. For example, a construction machine operator can locate individual dump trucks; or a dump truck driver can determine the best unloading point by identifying the positions of individual construction machines in a jobsite.
The application provides various functions such as a real-time viewer (on a dashboard), a machine approach notification function for construction machine operators, alert functions for dump truck drivers, a counting function at a loading/unloading point, a payload system loading result display function, a work history or traveling history display function, and links to iOS or Android applications.

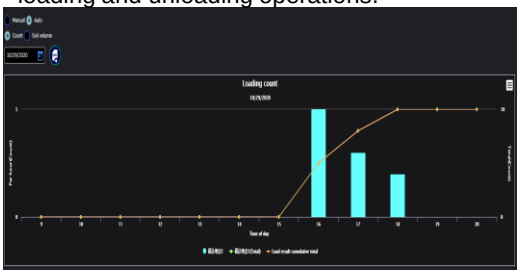
1 Traveling route display function
You can find the current position of a machine.



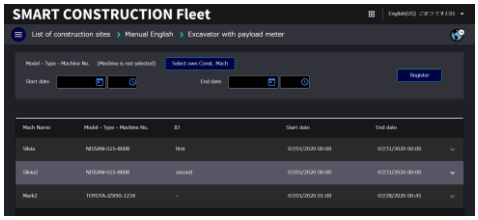
2 The voice alert notification function alerts you that a machine is approaching.

3 Display of work history
You can manage the loading work or traveling history of each machine on a daily basis.

4 Display of work history
You can manage the history of daily loading and unloading operations.



5 With the web application, you can check the loading history recorded using the Payload system.



Preparation for SMART CONSTRUCTION Fleet

03

3. Preparation for SMART CONSTRUCTION Fleet

■3-1 What you need and recommended operating environment

What you need

A personal computer capable of running SMART CONSTRUCTION Fleet (Lite)

A smartphone on which the SMART CONSTRUCTION Fleet mobile application is installed.

Or

The SMART CONSTRUCTION Fleet device to be retrofitted to a construction machine or dump truck.

Recommended operating environment for the Web application

are **not recommended** because the application **does not work properly** on these web browsers.

← Download Google Chrome to access the application.

Recommended operating environment for mobile application

[iPhone]

- iPhone 6s / iPhone SE (1st generation)
  OS versions: iOS 13 or later

[Android]

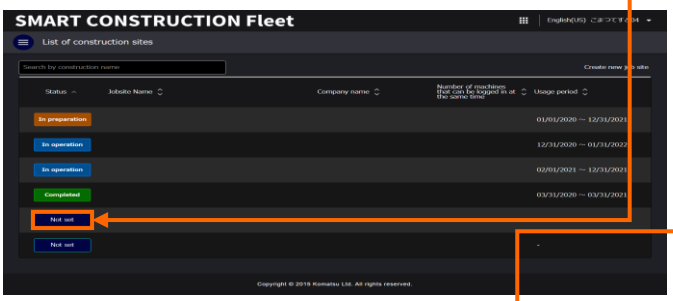
- MONO (MO-01K)
  OS versions: 7.1.2 / 8.0.0
- ZenFone Max (M2) (ZB633KL)
  OS versions: 8.1 / 9.0

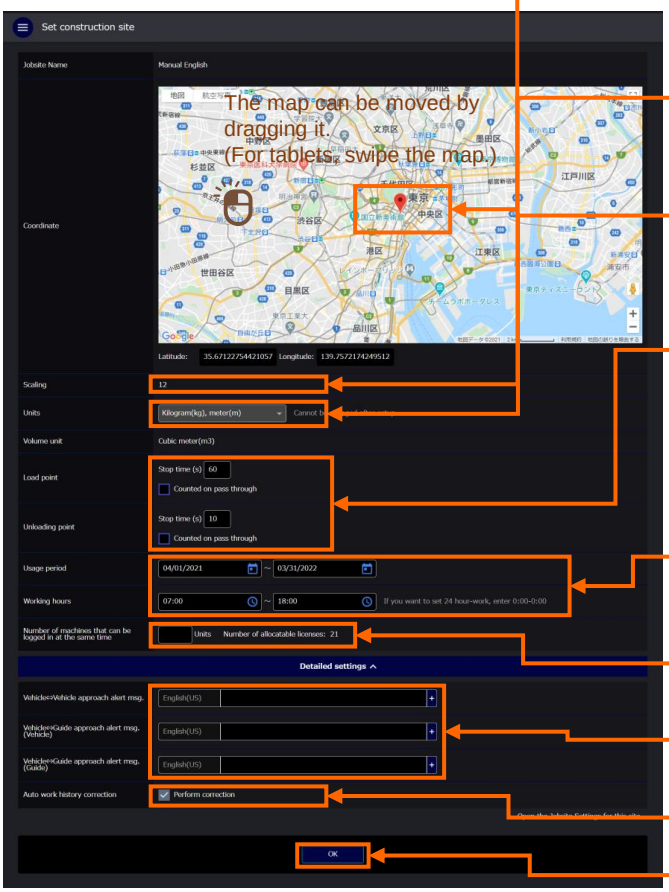
SMART CONSTRUCTION Fleet
Initial Settings

04

4 Initial Settings

■4-1 Setting jobsites





■ 1 From Jobsite Setting, create a jobsite in advance, and then start SMART CONSTRUCTION Fleet.

■ 2 When SMART CONSTRUCTION Fleet displays an uninitialized jobsite as **Not set**, click Jobsite name.

! The legends of the “Jobsite list” screen are as follows.

- Completed → End of construction period
- In operation → Within construction period
- In preparation → Before construction period
- Not set → Jobsite Settings not completed

■ 3 Coordinate: Move the map so that the construction site you want to manage can be displayed in the center of the map.

* The time zone in the center area of the map applies.

The view can be switched between map and aerial photography.

■ 4 You can change the scale of the map by scrolling while holding down the Ctrl key on the map.

(The scale set here will apply to the map-related screens.)

■ 5 Choose the unit between kilogram (kg), meter (m) and yard (yd) , pound (lb).

■ 6 Set the stop times for the loading and unloading auto-count. When you check the “Counted on pass through” checkbox, loading or unloading is automatically counted when a vehicle or construction machine passes through a predetermined loading or unloading point.

■ 7 Enter Usage period and Working hours.

* Setting 00:00 to 00:00 represents a time in the 24-hour notation.

■ 8 You can set the number of machines that can log in simultaneously.

■ 9 You can enter an Approach alert message.

(Available only on the smartphone application.)

■ 10 Automatically corrects double counting caused by GPS fluctuation.

■ 11 Click **OK**.

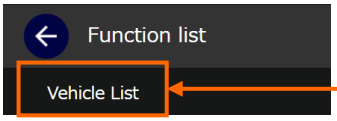
! Only a jobsite name set from Jobsite Setting is applied. For other items, settings that have been configured in “Construction site settings” on SMART CONSTRUCTION Fleet will apply.

■4-2 Adding vehicles (1/3)

For drivers (example)

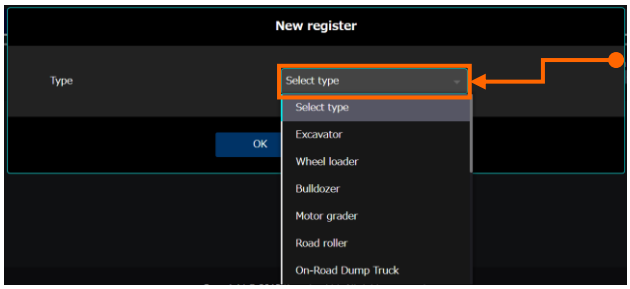
! If you want to link the application with the Payload system, register vehicles for drivers.

! If you want to use construction machines with a payload , you need to register them. (For details, see “4-4 Construction machines with a payload”.)

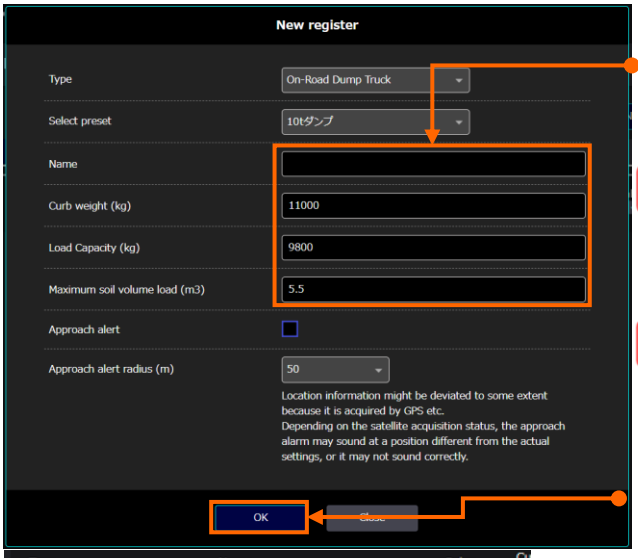


■ 1 Choose “Vehicle List”.

■ 2 Click “New register”.



■ 3 Select a type of the vehicle for the driver you want to register.

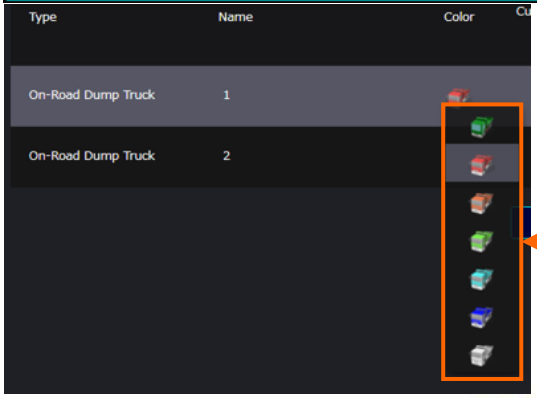


■ 4 Select the preset as a reference and enter vehicle information in the fields (required).

! A maximum soil volume load entered here is converted to a soil volume per loading/unloading.

! Approach alert is explained in detail in 4-11.

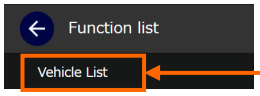
■ 5 Click **OK**.



! You can select the color of an icon if “Dump truck” is selected for the vehicle type.

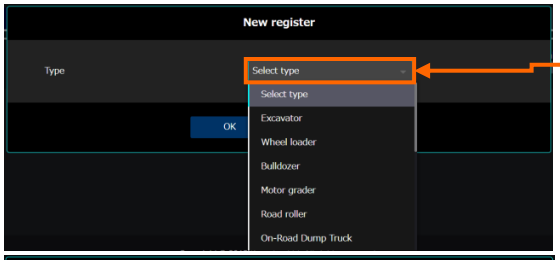
■ 4-2 Adding vehicles (2/3)

For operators (example)

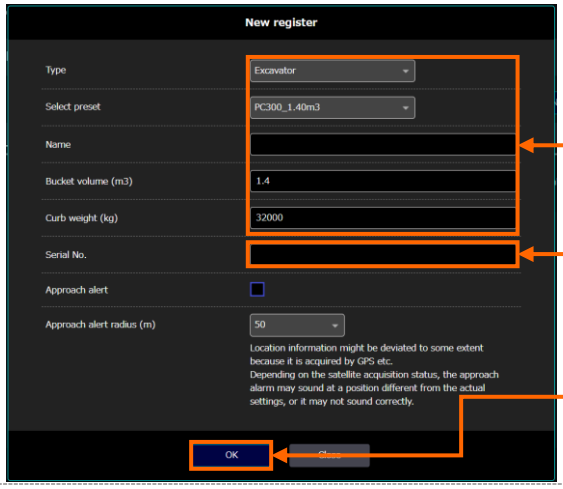


■ 1 Choose “Vehicle List”.

■ 2 Click “New register”.



■ 3 Select a type of the vehicle for the operator you want to register.



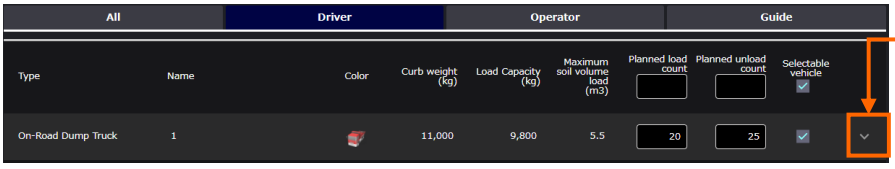
■ 4 Select the preset as a reference and enter vehicle information in the fields (required).

Bucket volume is a function under development and currently unavailable.

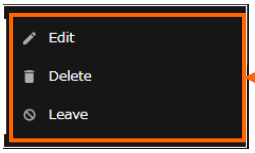
■ 5 Enter a value to Serial No. (optional)

■ 6 Click **OK**.

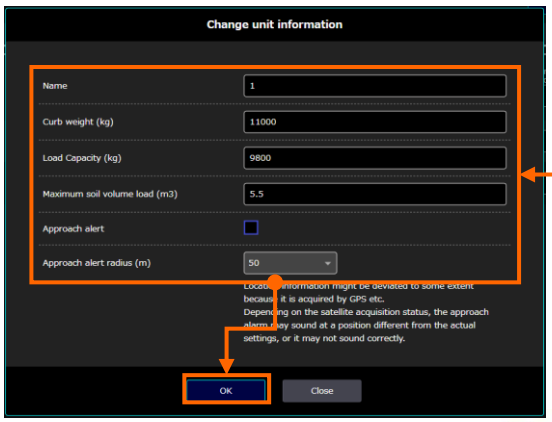
Editing vehicle information

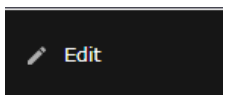


■ 1 Click “∨”.



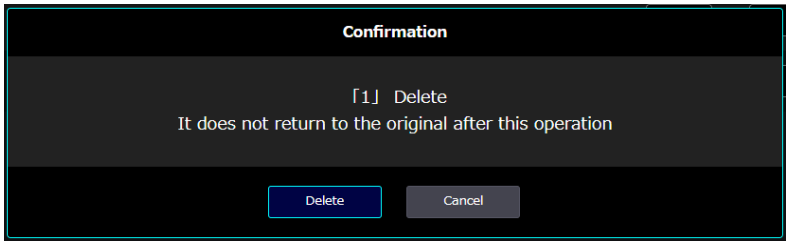
■ 2 Select the task to be done from the items.





■ “Edit” allows you to edit the setting information.

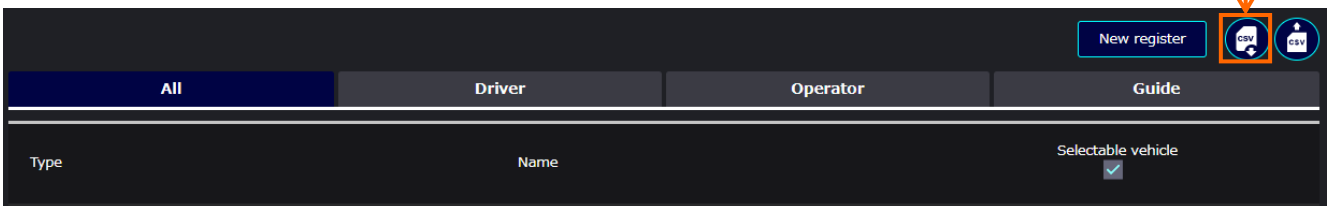
■4-2 Adding vehicles (3/3)



■ “Delete” can delete the vehicle.

Downloading vehicle data

■1 Click next to New register.
(The file is saved as “vehicles-xx.csv”.)

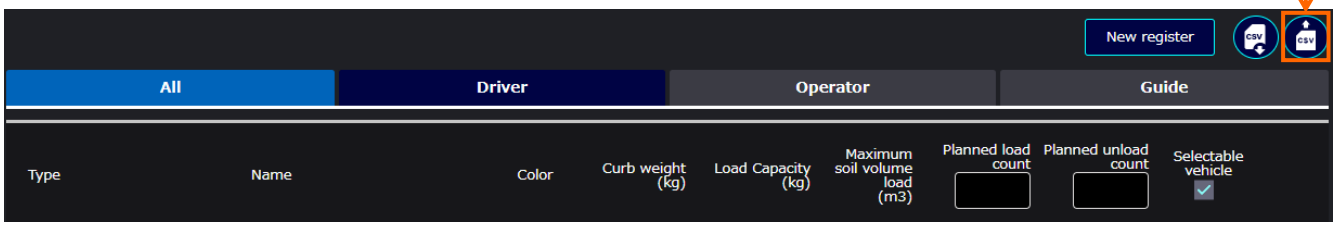


The CSV file includes data on type, name, color, curb weight, loading capacity, loading soil volume capacity, bucket volume, blade width, blade volume, administrative number, approach alert and approach alert radius.

Type	Name	Color	Curb weig	Loading c	Loading s	Bucket vol	Blade wid	Blade volu	Administr	Approach	Approach alert radius (m)
ON_ROAD_DUMP_TRUCK	1	RED	11000	9800	5.5					TRUE	50
ON_ROAD_DUMP_TRUCK	2	GREEN	11000	9800	5.5					FALSE	50
EXCAVATOR	3		8000			0.28				FALSE	50
EXCAVATOR	4		8000			0.28				FALSE	50

Vehicle Batch Registration

■1 Click next to New register.



■2 The window to select files opens. Select the vehicle information file for batch registration.

■ 4-3 Settings for vehicle list

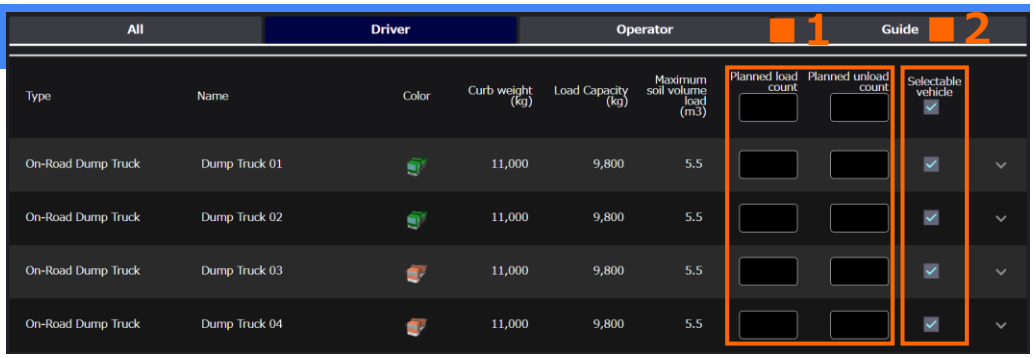
■ 1 You can set planned load and unload counts for a driver. (optional)

■ 2 The vehicles of which the “Machine to be used” checkbox is checked in the vehicle list are displayed in the following cases:
- When a dump truck is selected from the mobile application.
- When the vehicle is linked with the payload system.

■ 3 Click the Update button on the bottom of the screen to save the changes.

Driver

Dump Truck



Operator

Excavator

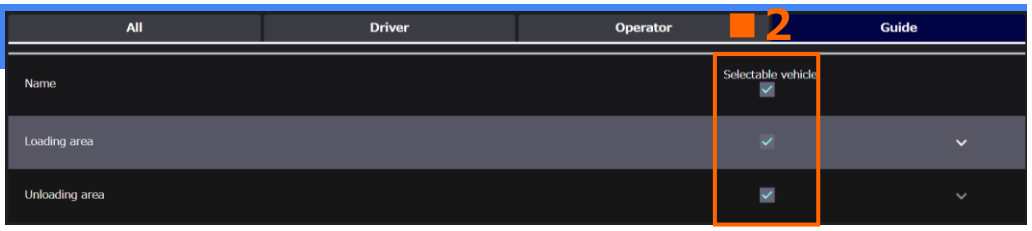
Bulldozer

! If there is any guide using the mobile application, you also need to register the guide.

Guide

Loading point A

Unloading point A

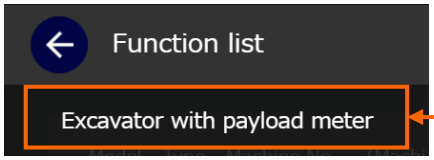


■4-4 Construction machines with a payload meter (1/3)

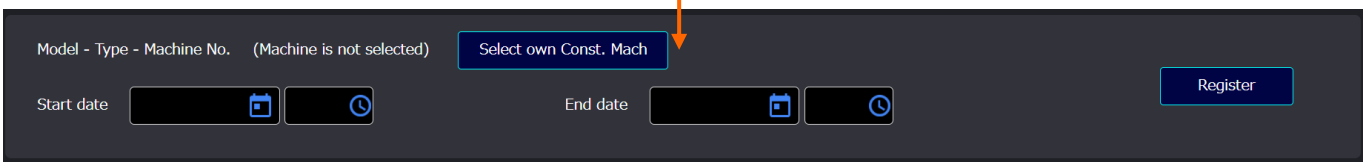
When you register a construction machine with a payload meter, the loading result of the registered machine appears in “Loading result (Payload)”. (For details, see 5-7 “Loading result (Payload)”.)

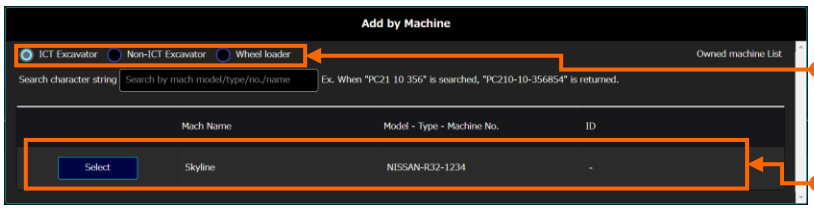
For details about the Payload, see instruction manuals for other systems.

■1 Log in with the ID of the user who owns the construction machine, and click “Excavator with payload meter”.



■2 Click “Select own Const. Mach”.



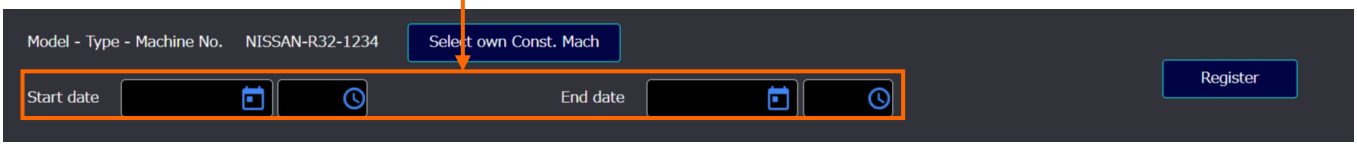


■3 In the window, select the construction machine you want to register.

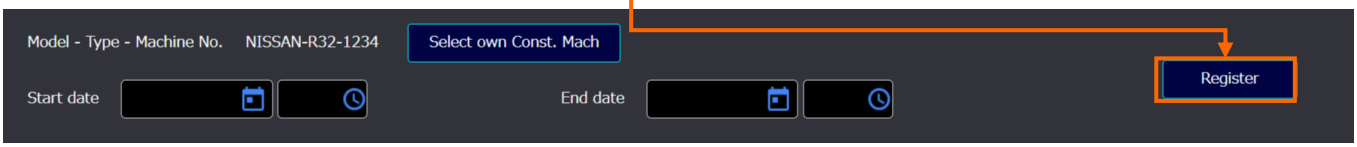
■4 Select the construction machine you want to add.

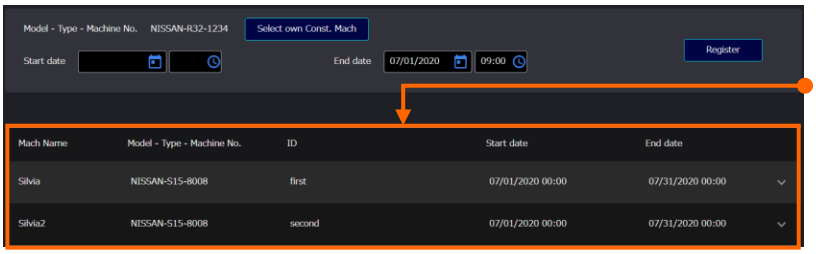
You cannot retrieve the information of the construction machine you have selected in the search if you have not registered it yet.
In such a case, register it by following the steps on the next page.

■5 Enter dates in “Start date” and “End date”.



■6 Ensure that the information to be registered is correct, and click Register.

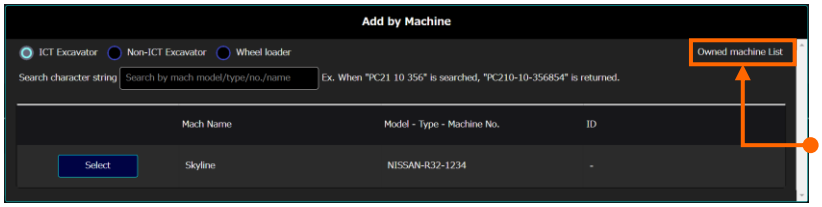




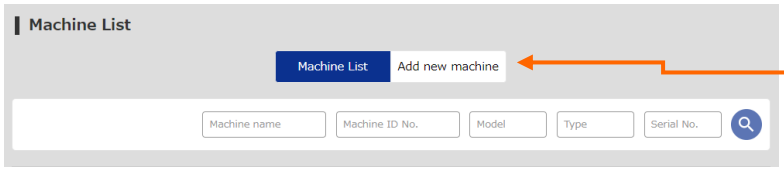
■7 The construction machine with a payload meter you have registered is displayed.

■4-4 Construction machines with a payload meter (2/3)

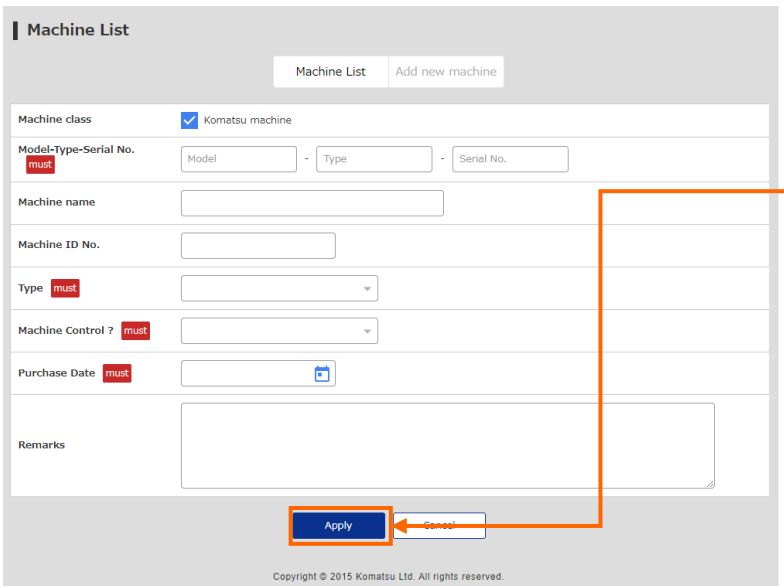
You cannot retrieve the information of the construction machine you have selected in the search if you have not registered it yet.
Log in with the ID of the user who owns the construction machine, and follow the steps below to register the construction machine.



■ Click “Machine List”.



■ Click “Add new machine”.



■ Ensure that the information to be registered is correct, and click Apply.

The construction machine you register here will be registered to the construction machine database shared with SMART CONSTRUCTION Dashboard.

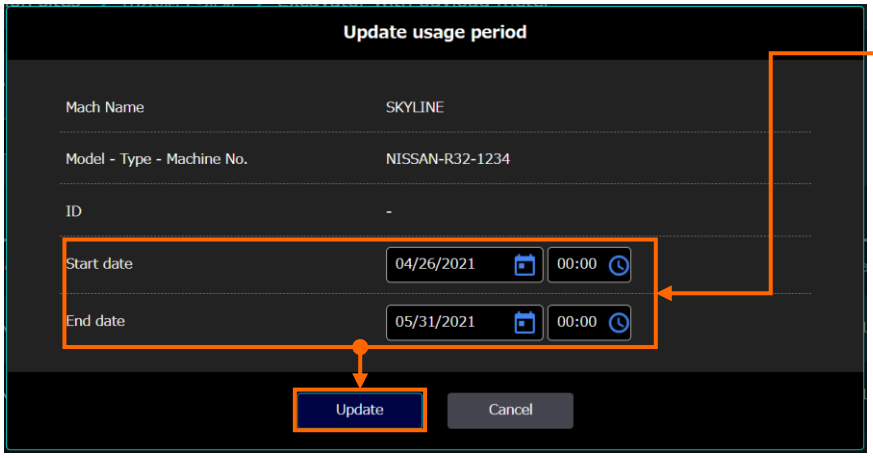
The construction machine database used in SMART CONSTRUCTION Pilot (Web application) is independent and cannot be used in other applications.

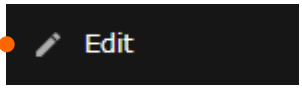
■4-4 Construction machines with a payload meter (3/3)

Edit payload machine information

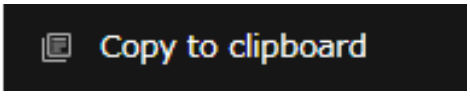
■1 Click “∨”.

■2 Select the task to be done from the items.

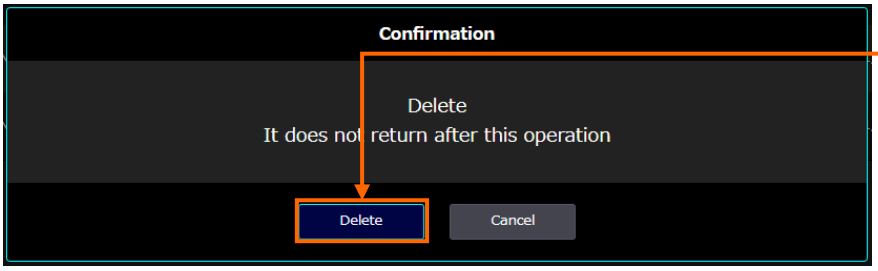


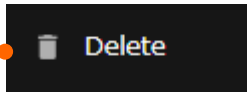


■ “Edit” allows you to edit the current setting information.



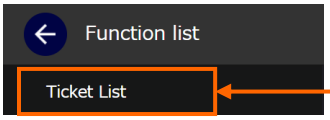
■ “Copy to clipboard” copies the payload machine information.



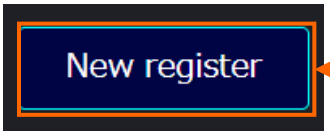


■”Delete” can delete a payload machine.

■4-5 Issuing tickets (1/2)



■ 1 Select “Ticket List”.



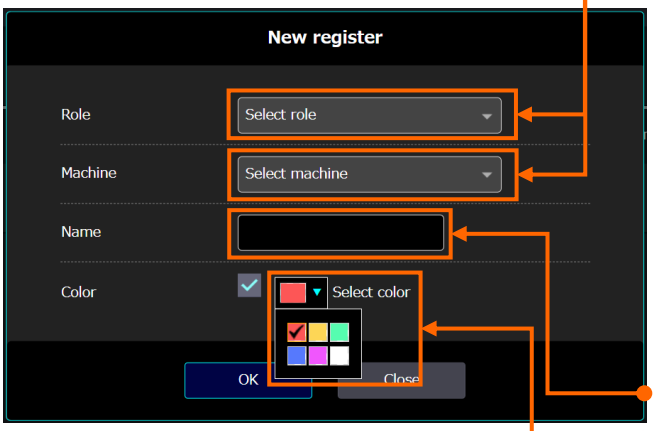
■ 2 Click “New register”.

■3 Select a role. (Optional)

■4 Select a Machine. (Optional)

List of roles and machines

Role	Machine
Operator	Excalator
	Bulldozer
	Wheel Loader
	Road Roller
	Motor Grader
Driver	On-Road Dump Truck
	Tank Truck
	Concrete Mixer Truck
	Crawler Carrier
	Articulated Dump Truck
	Rigid Dump Truck
	Motor Scraper
	Bus
	Van
	Commercial Van
Guide	-



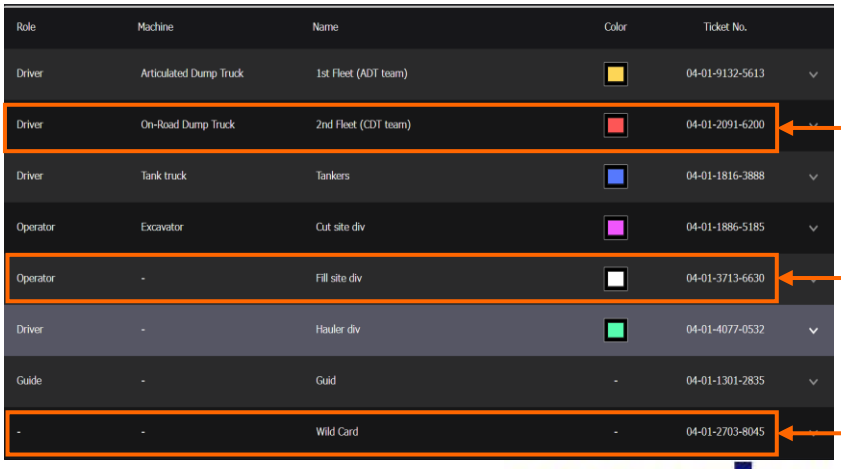
■4 Enter a ticket name. (Required)

■5 Select a color. (Optional)

The color selected here is displayed next to the machine name on the map-related screens including the dashboard, etc.

■ 7 Click **OK**.

Creating a ticket (example)



Role	Machine	Name	Color	Ticket No.
Driver	Articulated Dump Truck	1st Fleet (ADT team)		04-01-9132-5613
Driver	On-Road Dump Truck	2nd Fleet (CDT team)		04-01-2091-6200
Driver	Tank truck	Tankers		04-01-1816-3888
Operator	Excavator	Cut site div		04-01-1886-5185
Operator	-	Fill site div		04-01-3713-6630
Driver	-	Hauler div		04-01-4077-0532
Guide	-	Guid	-	04-01-1301-2835
-	-	Wild Card	-	04-01-2703-8045

You can register tickets in various combination patterns.

Example 1)
Role: Driver
Machine to be used: Dump truck

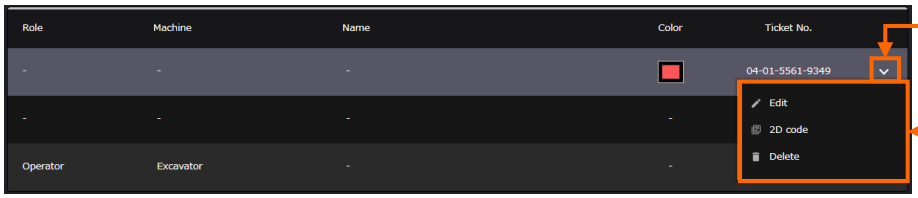
Example 2)
Role: Operator
Machine to be used: Blank

Example 3)
Role: Blank
Machine to be used: Blank

When you add a ticket without selecting a roll and a machine, a ticket enabling the selection of all types of machines will be created.

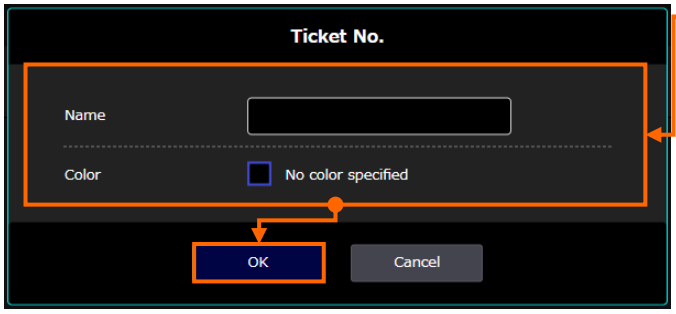
■4-5 Issuing tickets (2/2)

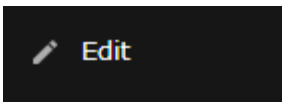
Editing ticket information



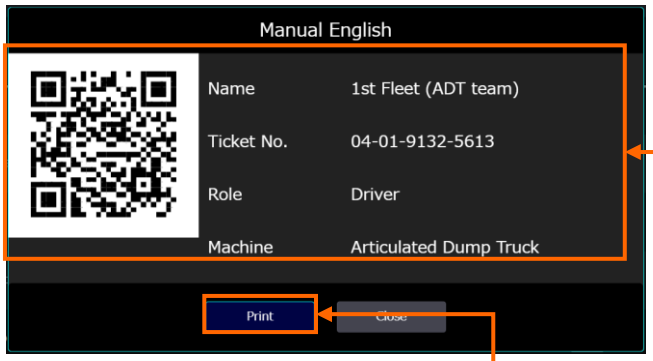
■1 Click “∨”.

■2 Select the task to be done from each item.



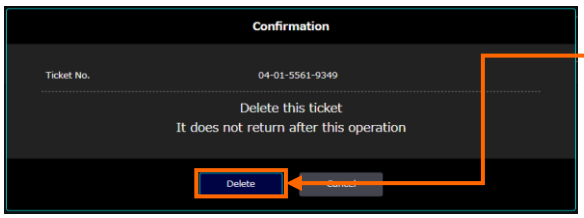


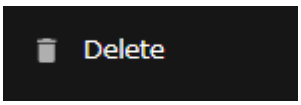
■ “Edit” allows you to edit the current setting information.



■ “2D code” shows the two-dimensional code of the ticket and the ticket information.

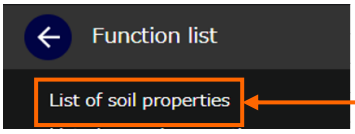
The information can be printed.





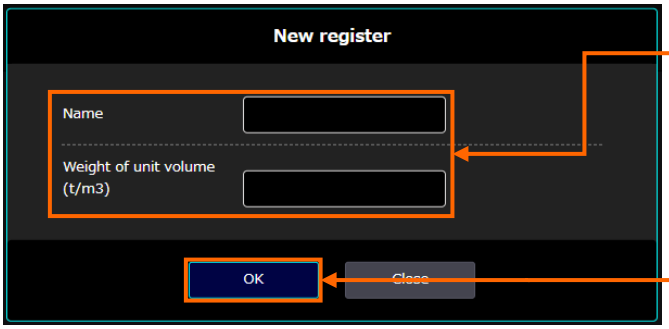
■ “Delete” can delete the ticket.

■4-6 Soil property setting



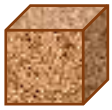
■1 Select “List of soil properties”.

■2 Click “New register”.



■3 Enter the soil name and unit weight.

* Soil is registered in the initial state.



■4 Click **OK**.

List of soil properties (example)

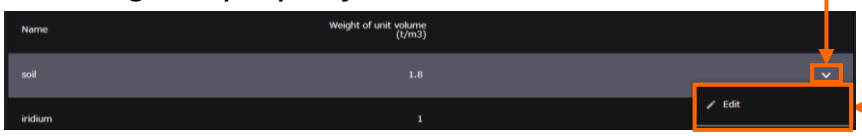
Name	Weight of unit volume (t/m3)
soil	1.8
iridium	1

! Calculation of the loaded soil volume (example)

Type	Name	Color	Curb weight (kg)	Load Capacity (kg)	Maximum soil volume load (m3)	Planned load count	Planned unload count	Selectable vehicle
On-Road Dump Truck	1		11,000	9,800	5.5	20	25	☑

If a dump truck with its loading soil volume capacity (m3) set to “5.5” is loaded with soft rock with a unit weight (t/m3) set to “2.5”, the following volume is recorded in the loading history:
5.5 [m3] × (1.8/2.5) = 3.96 ≈ 4 [m3]

Editing soil property information



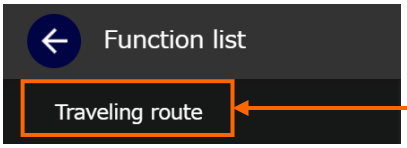
■1 Click “∨”.

■2 Select “Edit”.

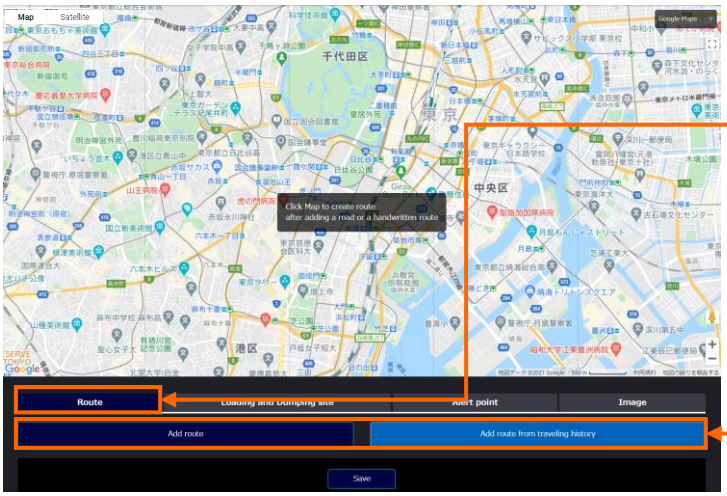
■3 Edit the information entered when setting the soil property.
(See “4-6 Soil property setting” 3.)

■4-7 Creating a traveling route (1/3)

This function allows you to display traveling routes on the dashboard or the mobile application.
The navigation function is not available.



■ 1 Click “Traveling route”.



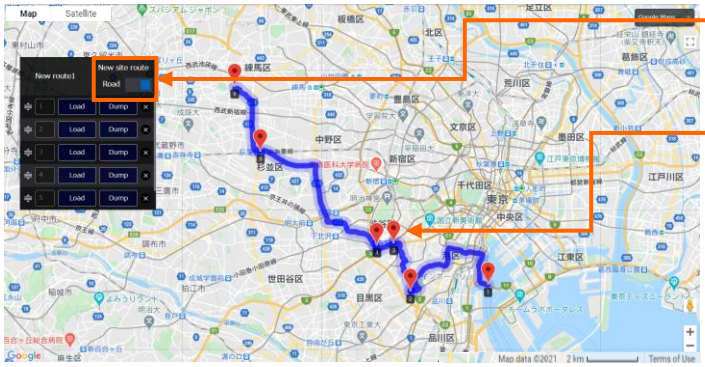
■ 2 Click “Route”.

■3 To create a new traveling route, click “Add route”. To create it from the traveling history, click “Add route from traveling history”.

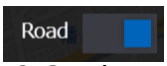
More than one route can be registered.

■4-7 Creating a traveling route (2/3)

Procedure for “Create route”



■1 Choose “Road” or “Handwritten”.



■2 On the map, click a place where you want to create a route.

You can toggle the setting between “Road” and “Handwritten” by clicking a pin.

→ **Go to next page**

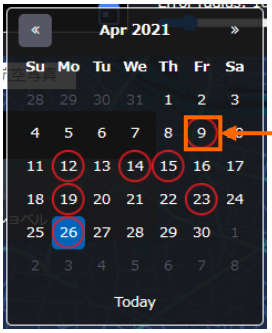
Procedure for “Add route from traveling history”

Intervals between points can be changed.
The shorter the interval becomes, the smoother line the traveling route becomes.

You can select “Road” or “Handwritten” for creating a route to be added.

For details, refer to “Section 9-3 Median error radius”.

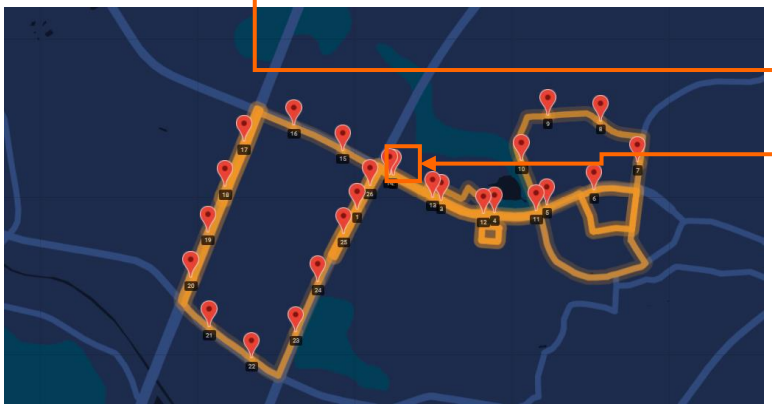
■1 Click and select a date in the traveling history that contains the information about the route you want to create.



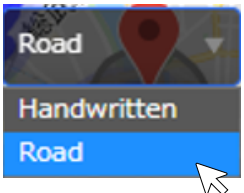
Dates with a traveling history are marked with ○.

■2 In the vehicle list of vehicles that traveled on the selected date, click a vehicle to select the vehicle (with a traveling history) you want to create.

■3 Click “Reflect on traveling route”.



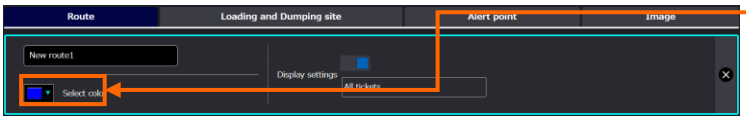
■4 To switch between “Road” and “Handwritten”, click the pin to select the desired one.



→ **Go to next page**

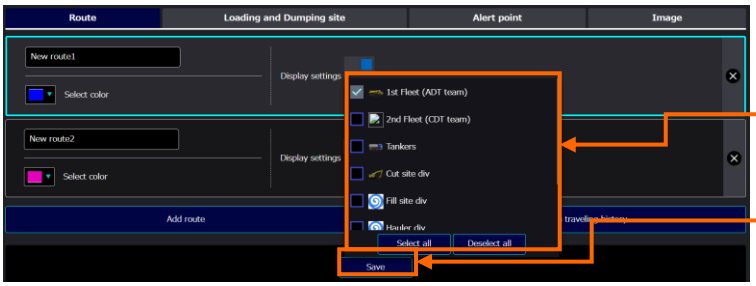
■4-7 Creating a traveling route (3/3)

Select the color and view of the traveling route created in “Create route” → “Create from traveling history”.



■1 Select a color to display a route (option)

You can select different colors for each routes. It is useful to create two or more routes.

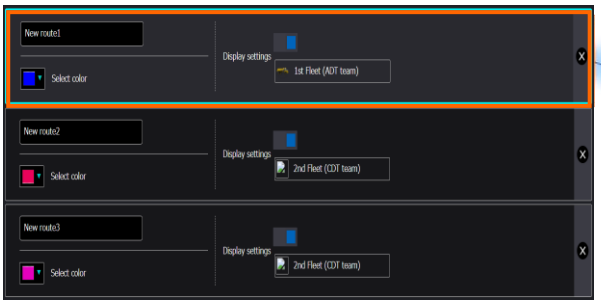


■ 2 Select a ticket for the route you want to display.

■ 3Click Save.

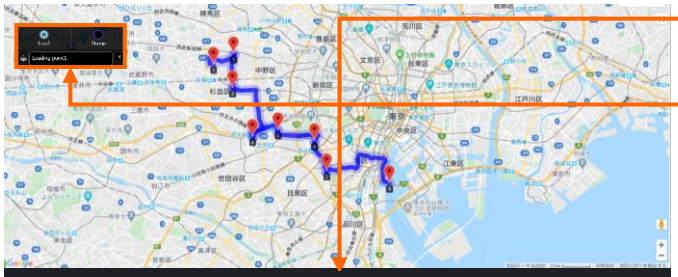
Showing/hiding a ticket (example)

When the ticket is checked for New route 1 in its Display settings



When the ticket is checked for New route 2 and New route 3 in their respective Display settings

■4-8 Creating a loading/unloading point (1/2)

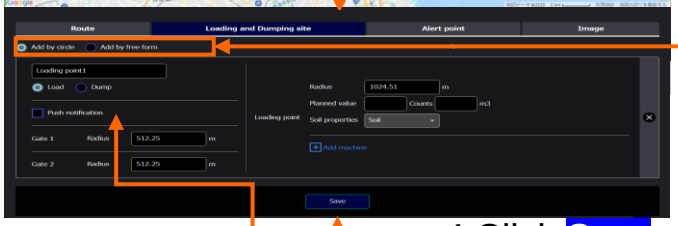


■1 Click the “Loading and Dumping site” tab.

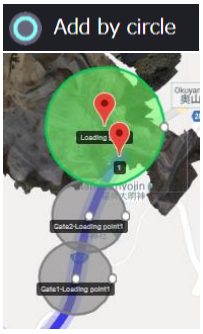
■2 Select “Load” or “Dump”.

Creates a loading point.

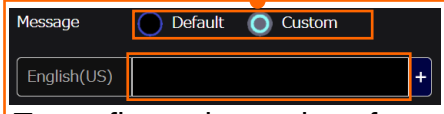
Creates a unloading point.



■3 Select “Add by circle” or “Add by free form”, and then click on the map.

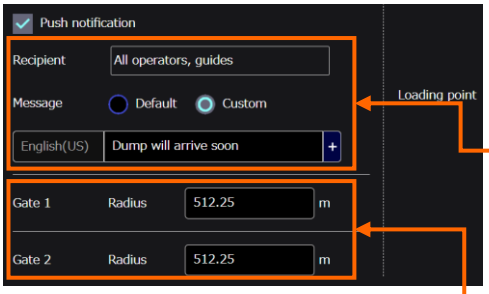


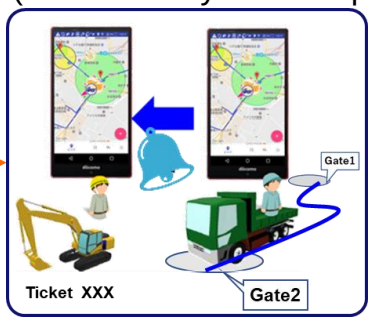
■4 Click Save.



To configure the settings for a default or custom message, check the “Push notification” checkbox.

Approach notification (example) (available only for smartphone applications)

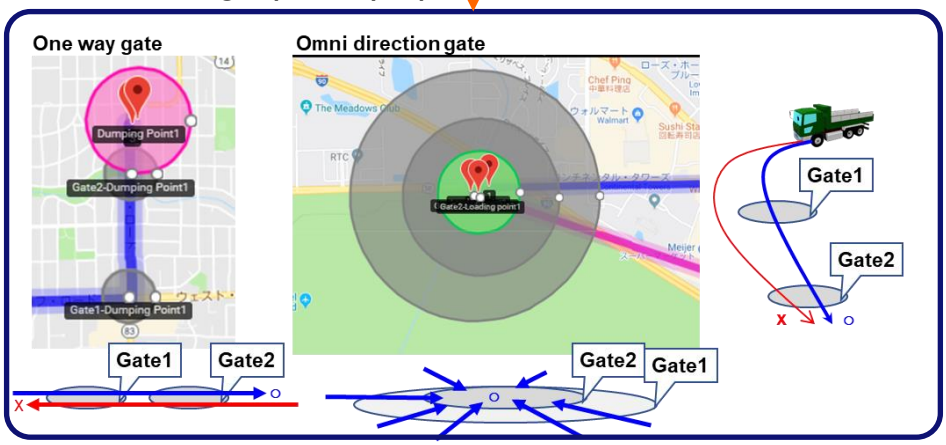




■ If a ticket is set as a notification destination to which you want to send push notifications, the message that has been set in the web application is displayed on the screen and read aloud when the construction machine approaches the loading/unloading point.

■ A notification destination can be set for each ticket.

Gate settings (example)



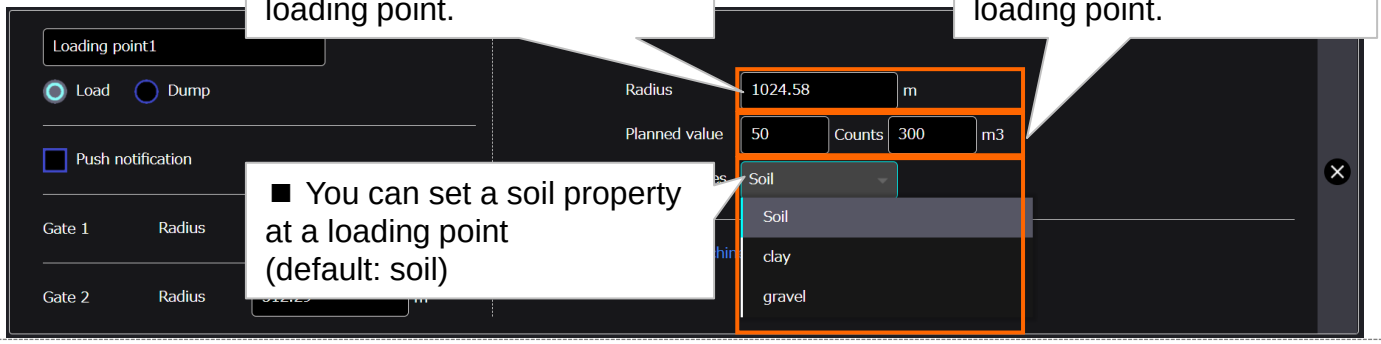
! You can set gates to trigger approach notifications or alert functions.
They are not used for loading and unloading counts.

■4-8 Creating a loading/dumping point (2/2)

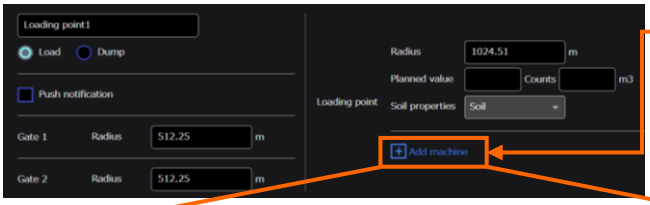
■ You can set the radius of a loading point.

■ You can set a planned value for loading to a loading point.

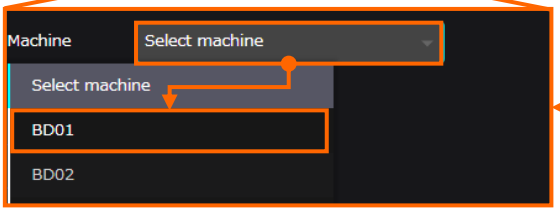
■ You can set a soil property at a loading point (default: soil)



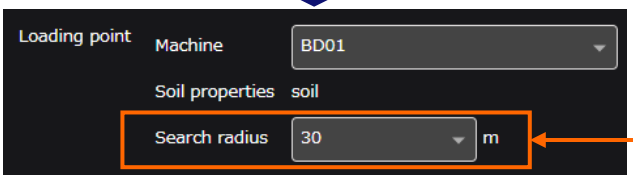
■4-9 Assign construction machinery to points



■1 Click “Add machine”.

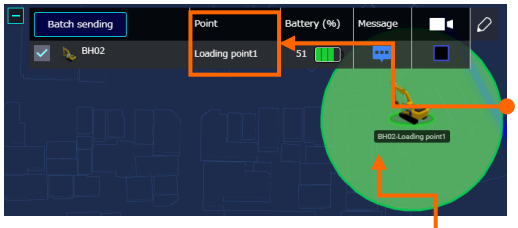


■2 Click “Select machine” and select the machine you want to assign to the point.



You can also change the radius using “Search radius”.

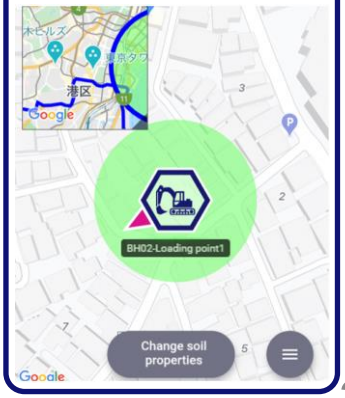
Showing the machine assigned to the loading point (example)



The window of the dashboard screen shows the name of the point assigned to the machine.

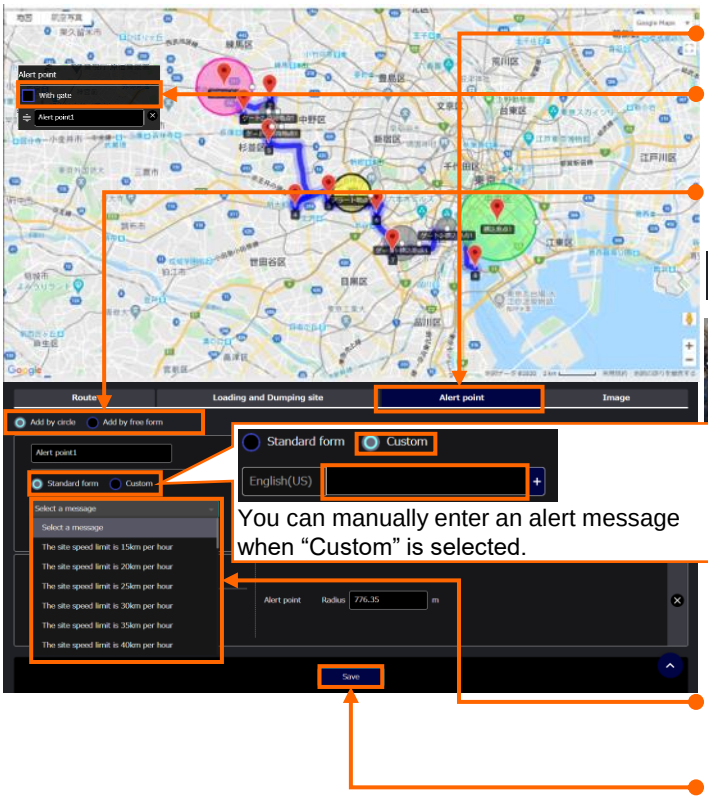
The machine assigned to the point is surrounded by a circle of the point color (green or pink).
(The radius of the circle will be as set in “Search radius”.)

<Mobile Application>



■4-10 Creating an alert point

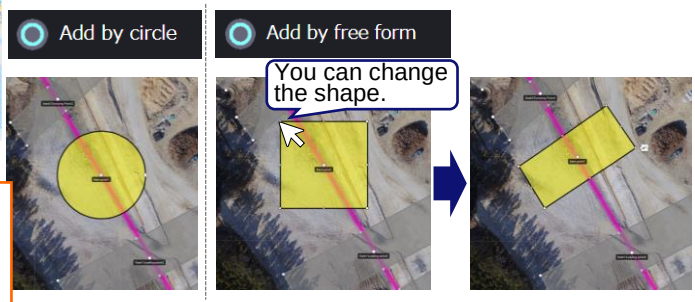
An alert message appears when the driver passes through a specific point.



■1 Click “Alert point”.

■2 Check this checkbox to set a gate.

■3 Select “Add by circle” or “Add by free form.”



■4 On the map, click the point where you want to set an alert.
(In like manner, set a gate.)

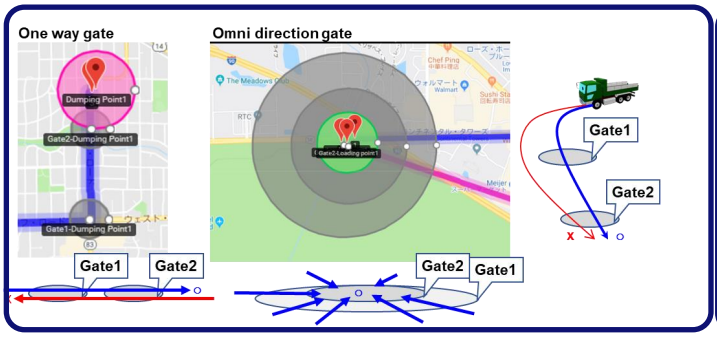
■5 Select a message.

■6 Click Save.

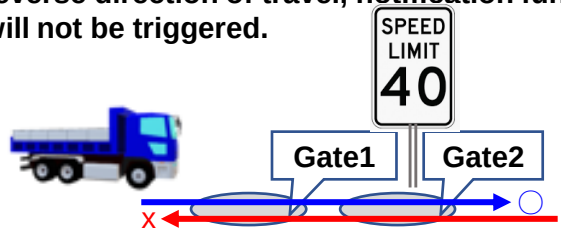
When the dump truck approaches the loading/unloading point when you are logged in with the ticket set as the push notification destination, the message set on the Web application is notified visually on the screen and read aloud.

Gate settings (example)

You can set gates to trigger approach notifications or alert functions.
They are not used for loading and unloading counts.

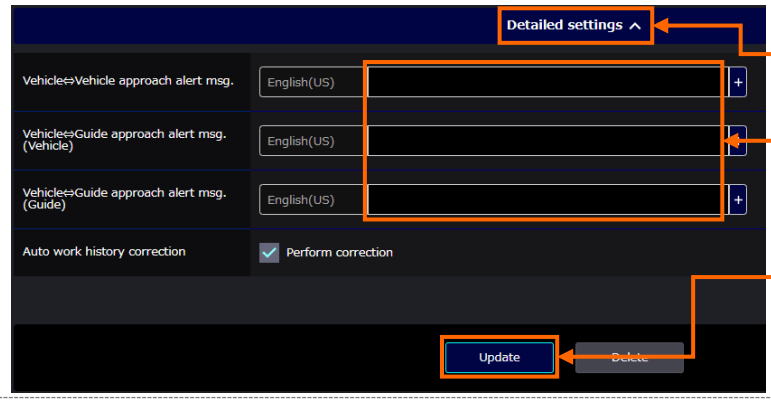


If the driver passes through the gate in the reverse direction of travel, notification functions will not be triggered.



■4-11 Approach alert

This function detects an approach between vehicles or between a vehicle and guide or another and notifies the mobile application of a visual message text and voice reading message.

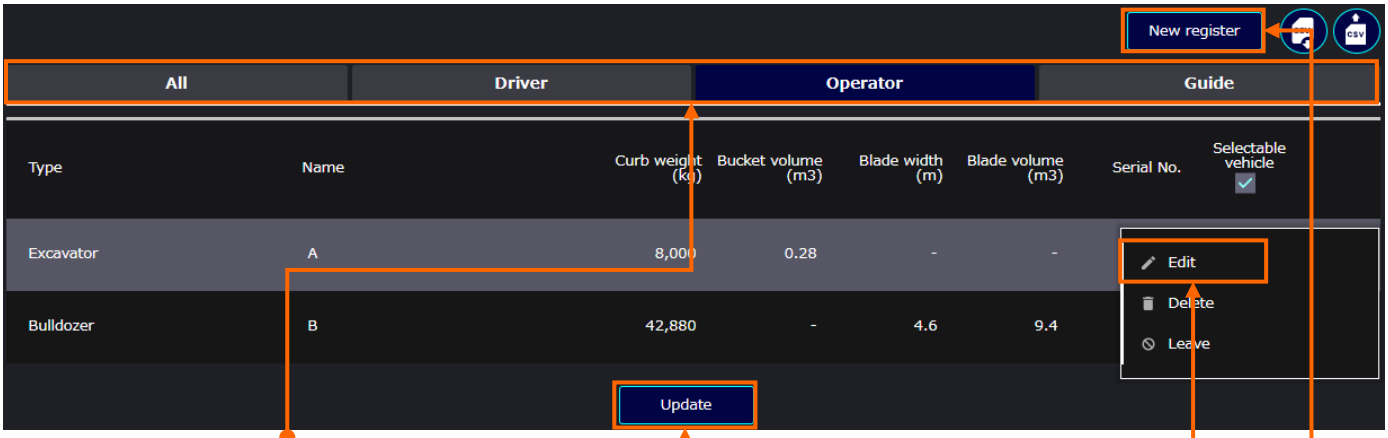


■1 Scroll down the screen from “Edit job site info” and open “Detailed settings”.

■2 Type the message you want to specify.

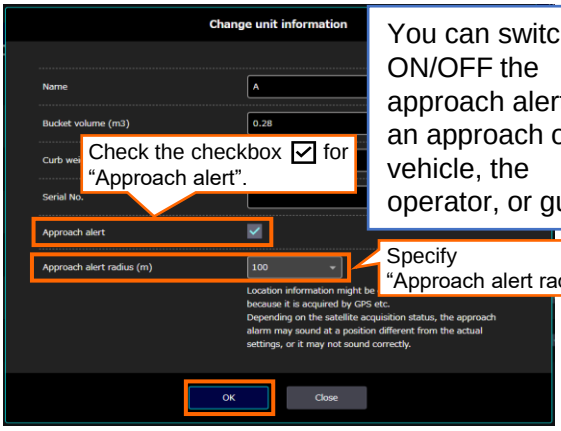
■3 Click Update.

“Vehicle List” screen



■1 Open the tab you want to set.

■2 Open “New register” or “Edit”.



Check the checkbox ☑ for “Approach alert”.

You can switch ON/OFF the approach alert for an approach of a vehicle, the operator, or guide.

Specify “Approach alert radius (m)”.

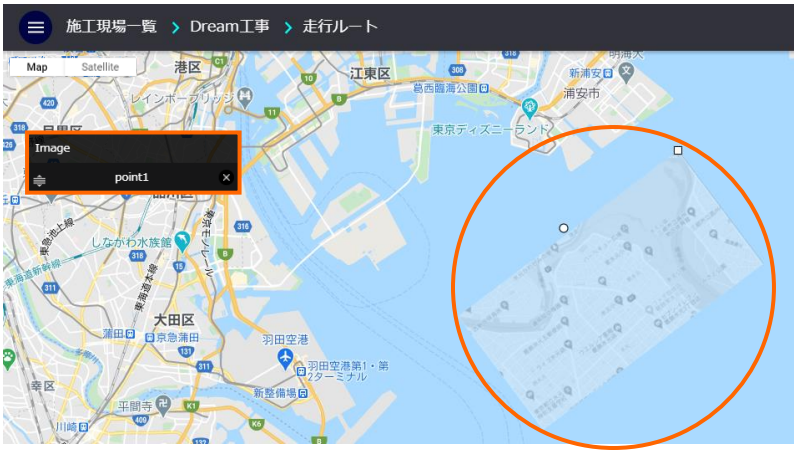
■3 Click Update.

Mobile terminal screen

Example: When an approach occurs between vehicles

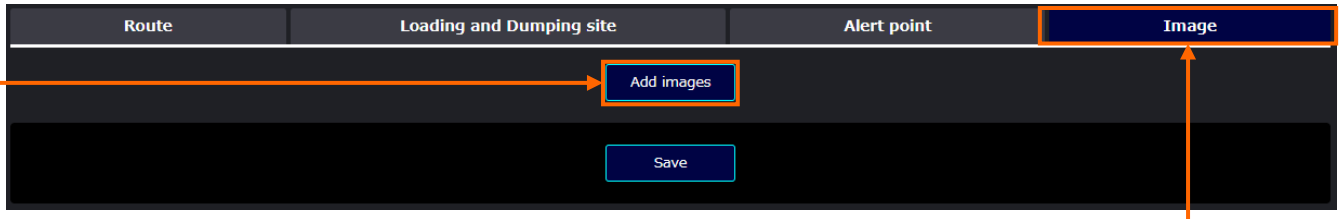
The contents specified in “Edit job site info” are reflected.

■4-12 Image insertion function (1/2)



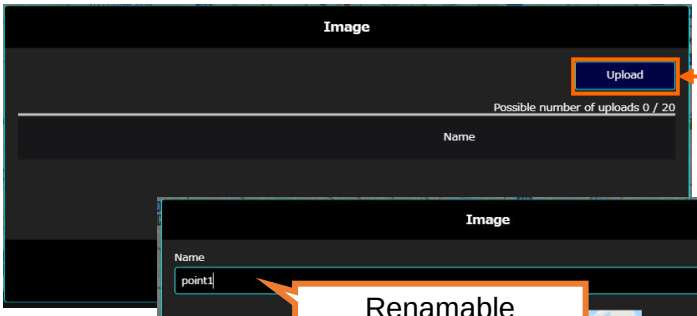
This function reflects the registered image on the map.

The registered image is reflected on the “Traveling route”, “Dashboard”, and “Traveling history” map screens.



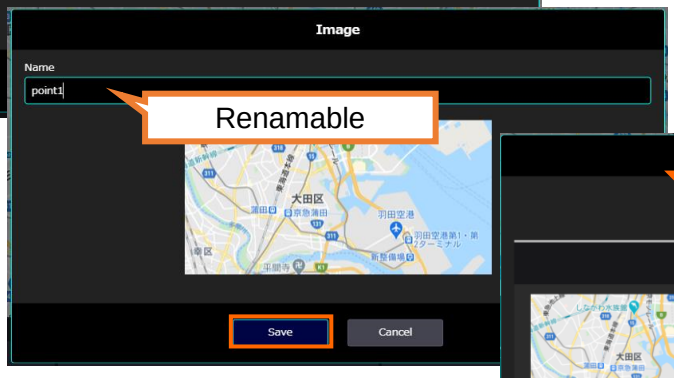
■1 Click the “Image” tab on the “Traveling route” screen.

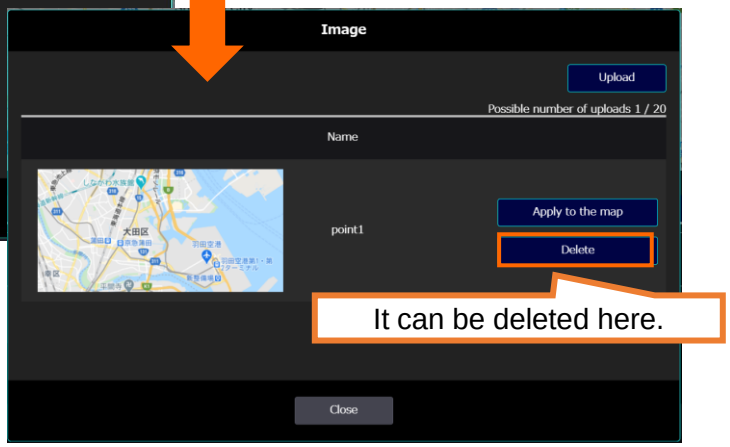
■2 Click “Add images”.



■3 Click “Upload”.

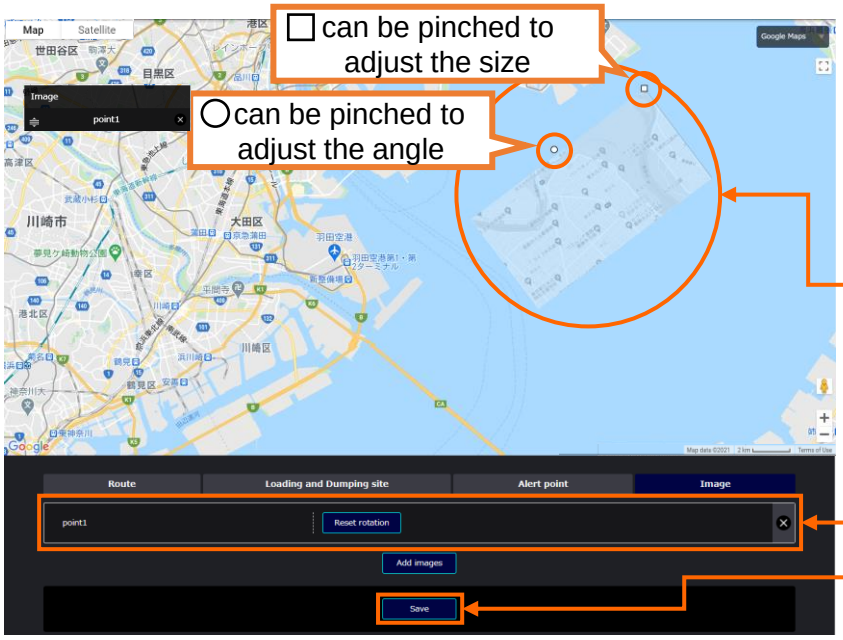
■4 Select the image you want to insert. The confirmation screen appears.
If no problem is found, click “Save”.





■5 Click “Apply to the map”.

■4-12 Image insertion function (2/2)

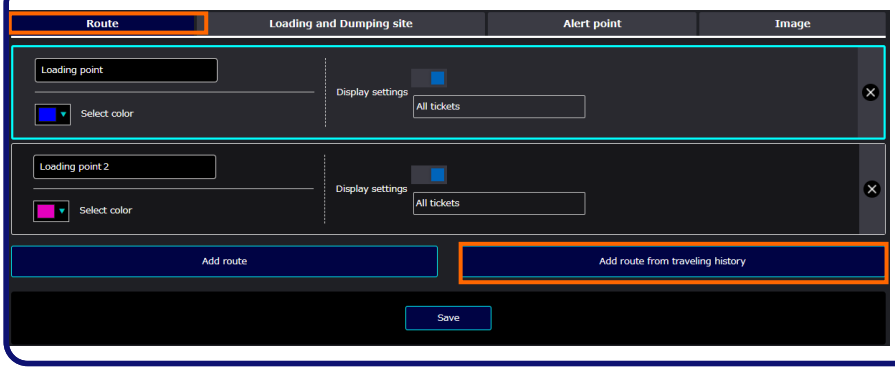


■6 The item for the set image has been added.

■7 You can drag this to the desired position. With each handle, you can also resize the image and adjust its angle.

■8 Finally click the “Save” button.

! If unsaved, the image is not yet registered.
After moving the angle or position, be sure to save the image.



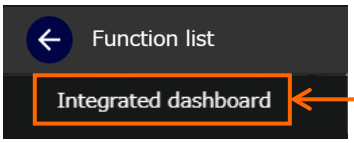
The image is not reflected on the map screen that is accessed by selecting “Traveling route” → “Route” tab → “ Add route from traveling route”.

SMART CONSTRUCTION Fleet
Operation start

05

■5-1 Integrated dashboard

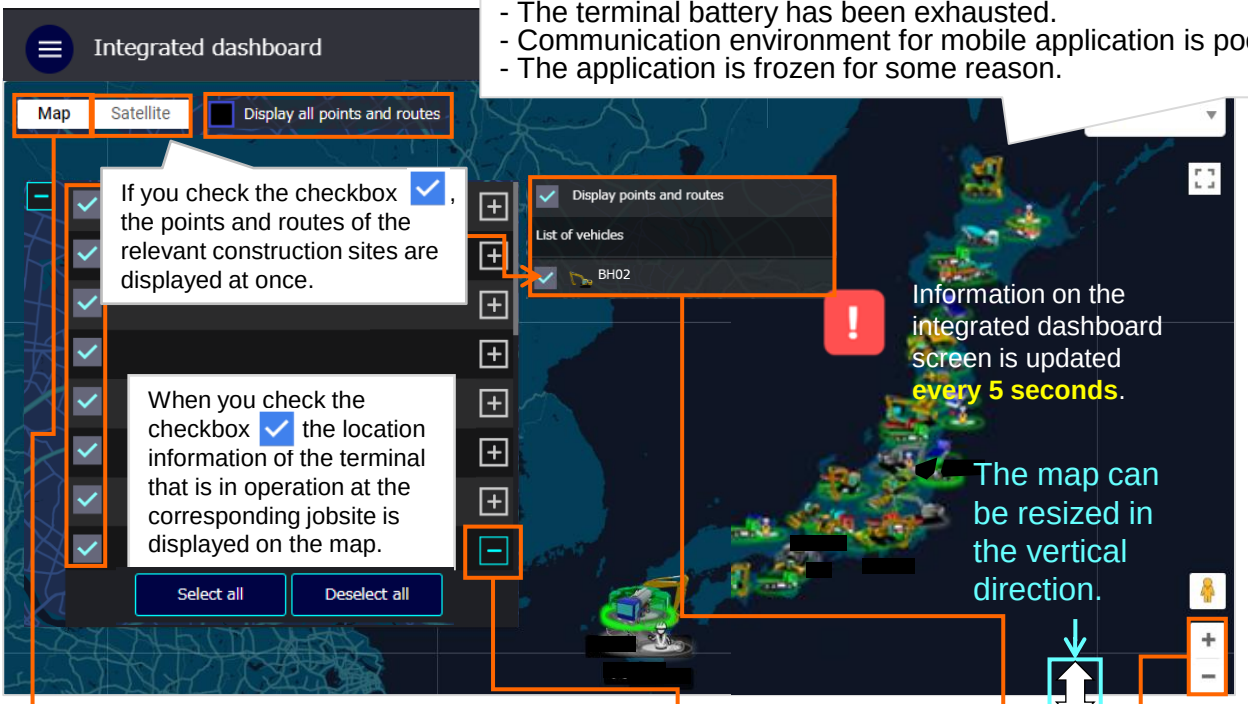
You can display real-time operation status in the jobsites you have arbitrarily selected from those associated with you.

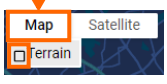


■1 Select “Integrated dashboard”.

* The initial center coordinates of the map are displayed according to the country setting of the login user account.

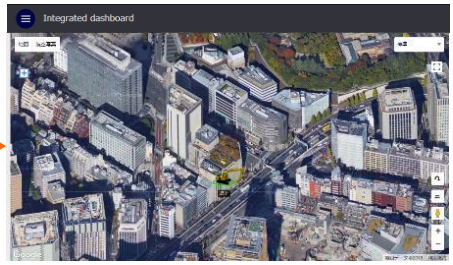
If any location information has not been sent from the mobile application for 10 minutes or more, the icon grays out.
Cases where location information has not been sent for 10 minutes or more include the following:
- No location information is sent due to the expiration of the working hours specified to the construction site.
- The terminal has been turned off while it is logged in.
- The terminal battery has been exhausted.
- Communication environment for mobile application is poor.
- The application is frozen for some reason.

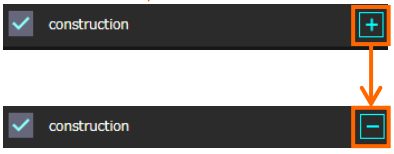




■ Click “Map” and check the “Terrain” checkbox, to show the Google Maps topography data.

■ Click “Satellite” to display the aerial photography. Check the “Labels” checkbox to show street names, etc. on the map.





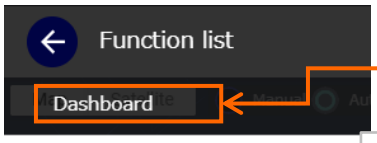
■ When you click ⊞ on the right end of the Jobsite name field, it turns to ⊟, and the names of terminals in operation are listed on the right.

Zooms in/out the map.
* The map can be zoomed in/out by Ctrl + wheel, or right click + wheel.

■ You can also switch between showing and hiding the active terminal with the checkbox ☑. Check the checkbox ☑, to show them.

■5-2 dashboard (1/4)

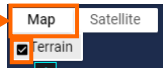
You can display real-time information, such as positions, loading points, unloading points, or alert points, on the construction machinery or trucks equipped with terminals on which the application is installed.



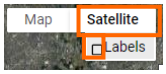
■1 Select “Dashboard”.
(This shows the dashboard of the currently selected jobsite.)

For the gate, see “4-8 Creating a loading/unloading point (1/2)”.

■ The clock displayed is that of the time zone set when the new construction site was created.



■ Click “Map” and check the “Terrain” checkbox, to show the Google Maps topography data.



■ Click “Satellite” to display the aerial photography.
Check the “Labels” checkbox to show street names, etc. on the map.

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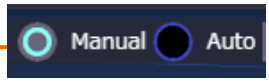
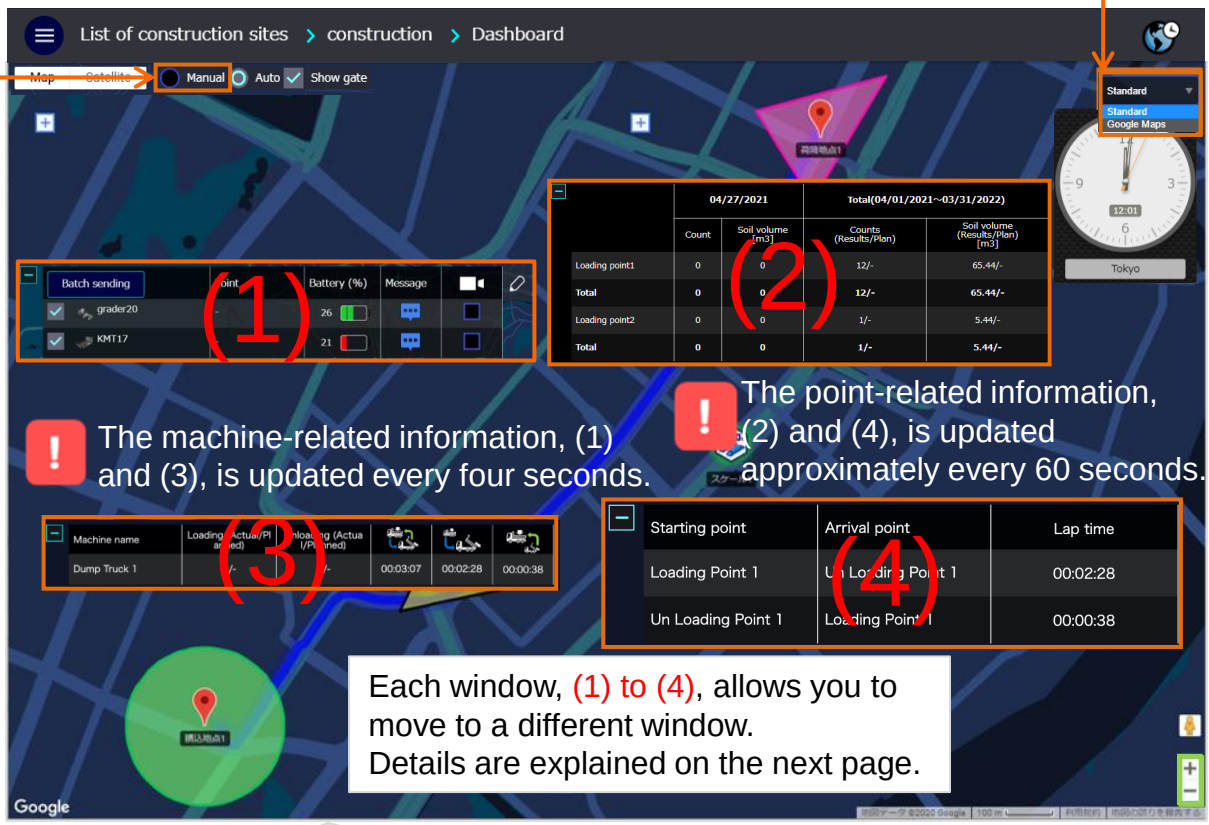
■5-2 dashboard (2/4)



■ You can switch between the manual and auto-loading/unloading results.

■ For an excavator, the direction is drawn based on the information of the electronic compass of the smartphone.
If the speed of a vehicle other than an excavator is 10 km/h or more, the direction is drawn based on the latitude and longitude information of GPS.

■ For viewing the map, you can select the following:
Standard: Initially displayed map with a blue tone color
Google Maps: Google standard maps

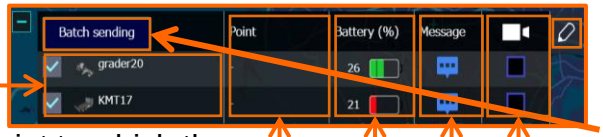


If any location information has not been sent from the mobile application for 10 minutes or more, the icon grays out.
[Typical cases where location information has not been sent for 10 minutes or more]
- No location information is sent due to the expiration of the working hours specified to the construction site.
- The terminal has been turned off while it is logged in.
- The terminal battery has been exhausted.
- Communication environment for mobile application is poor.
- The application is frozen for some reason.

■5-2 dashboard (3/4)

■ (1) Displays the logged-in vehicle information and sends the message.

■ You can show or hide the terminals in service by checking the checkbox ☑.
To show the terminals in service, check the checkbox ☑.



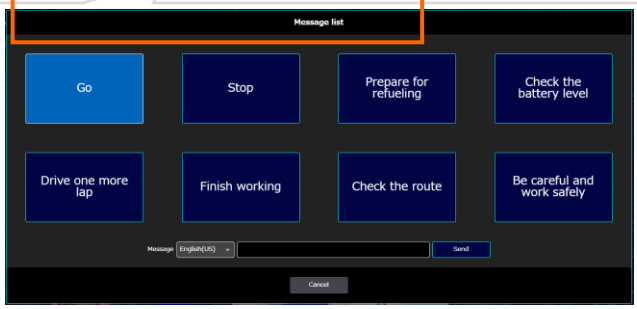
■ Displays the point to which the construction machine is assigned.

■ Displays the battery level (%).

■ Can switch the dashcam view.

Moves to the Vehicle List window.

■ Sends voice messages to the logged-in machines.
The “Batch sending” button allows you to send messages to all machines in the list at once.
The list of the messages that can be sent is displayed by clicking of the vehicle to which you want to send a message, an icon on the map, or the “Batch sending” button. To send a message, select it or type the text and click “Send”.



! In unstable network environments, messages may not be sent successfully.

! 

Routine voice messages can also be sent by clicking the icon on the map.

■ Indicates the total loading and unloading counts and soil volume (m^3) on the day.

■ Lists the loading and unloading points.

	04/27/2021		Total(04/01/2021~03/31/2022)	
	Count	Soil volume [m3]	Counts (Results/Plan)	Soil volume (Results/Plan) [m3]
Loading point1	0	0	12/-	65.44/-
Total	**0**	**0**	**12/-**	**65.44/-**
Loading point2	0	0	1/-	5.44/-
Total	**0**	**0**	**1/-**	**5.44/-**

■ (2) Displays the results and plan of loading and unloading operations by vehicle.

■ Indicates the result and planned values of loading and unloading counts and soil volume in a construction period. The cumulative period is the construction period that was set when the construction site was created.

Machine name	Loading (Actual/Planned)	Unloading (Actual/Planned)			
Dump Truck 1	2/-	1/-	00:03:07	00:02:28	00:00:38

■ (3) Displays cycle times by machine.

Starting point	Arrival point	Lap time
Loading Point 1	Un Loading Point 1	00:02:28
Un Loading Point 1	Loading Point 1	00:00:38

■ (4) Lists the lap times from each starting point to arrival point.

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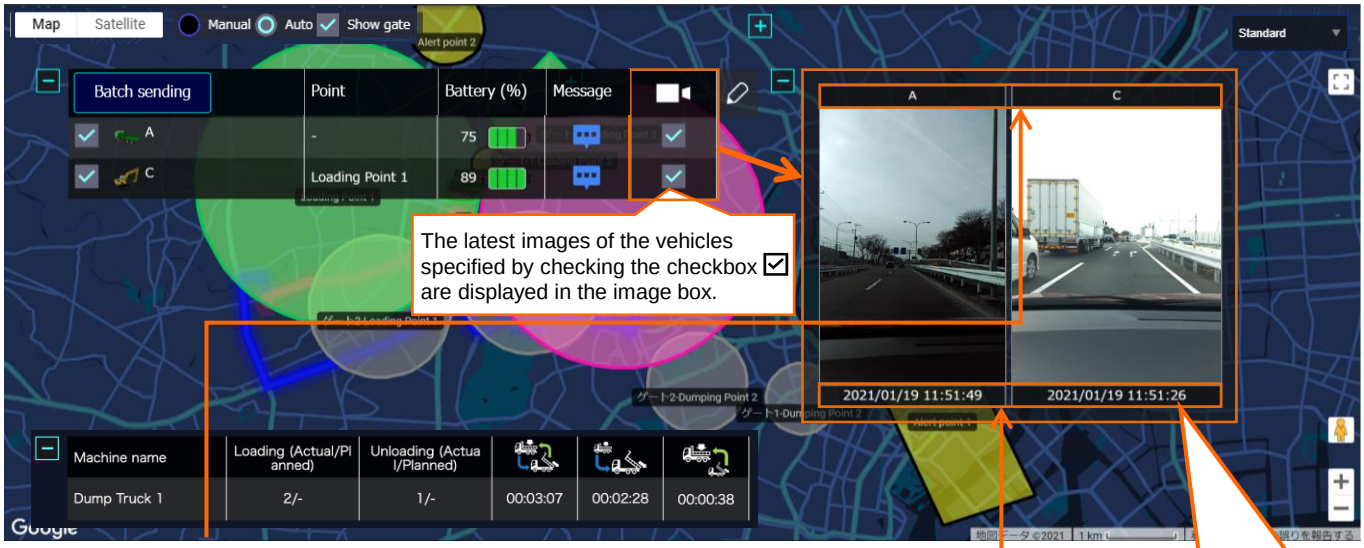
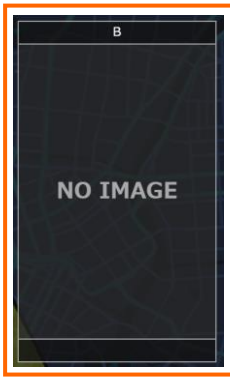
■5-2 dashboard (4/4)

This function displays the dashcam image taken by the mobile application on the dashboard screen.



■The vehicle name is displayed.

■ The date and time when the image was registered is displayed.

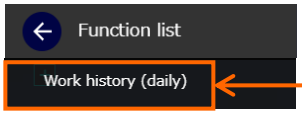


■ With no dashcam record, the left image is displayed.

! On the mobile application side,
- Images are taken when “Setting” → “Dashcam” are set to ON.
- If “Record only within point” is set to ON, images are recorded only in the loading or unloading point.
- Recording takes place at intervals of the “Recording interval” setting.
- Only images as displayed on the application screen are recorded.
- During image recording, “● REC” is displayed in the upper left of the screen.

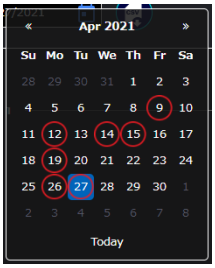
■5-3 Work history (daily) (1/2)

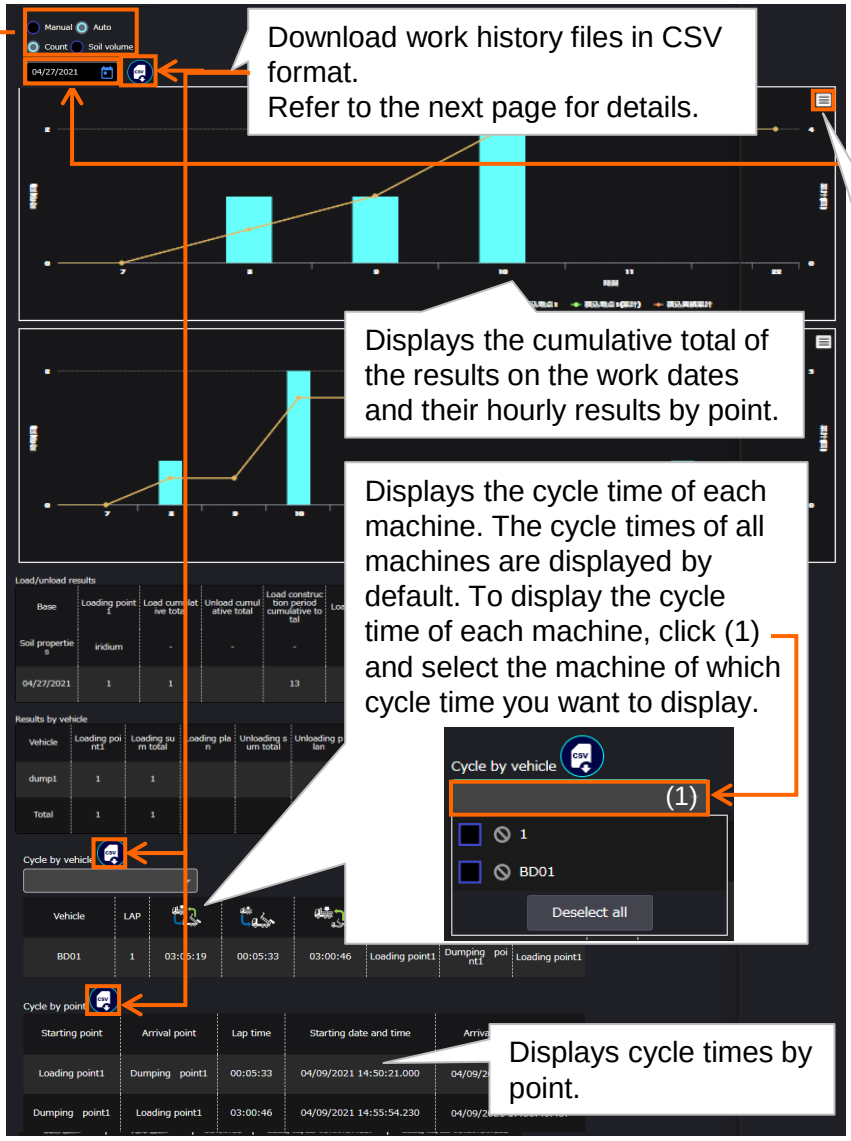
Displaying work history on the desired date



■1 Select “Work history (daily)”.

■2 Click next to “Date” and select the date (marked with a circle ○) on which you want to view the work history (this shows the work history corresponding to the selected date).





Download work history files in CSV format.
Refer to the next page for details.

Displays the cumulative total of the results on the work dates and their hourly results by point.

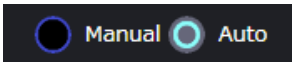
Displays the cycle time of each machine. The cycle times of all machines are displayed by default. To display the cycle time of each machine, click (1) and select the machine of which cycle time you want to display.

Displays cycle times by point.

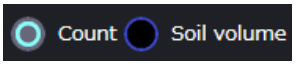
To print or save a work history graph, click ≡ on the graph.

Click to print a graph.

The graphs are saved in the following file formats:
・PNG ・JPEG ・PDF ・SVG



Counting loading/unloading operations can be switched between manual and auto.

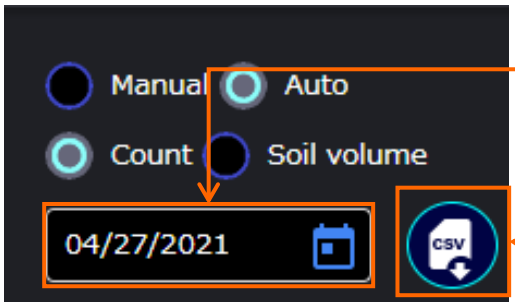


The format of the graphs or charts can be switched between “Count” and “Soil volume”.

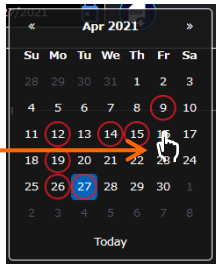
! For the manual/auto count, see “5-5 Manual/Auto count”.

■5-3 Work history (daily) (2/2)

Saving the work history (daily)



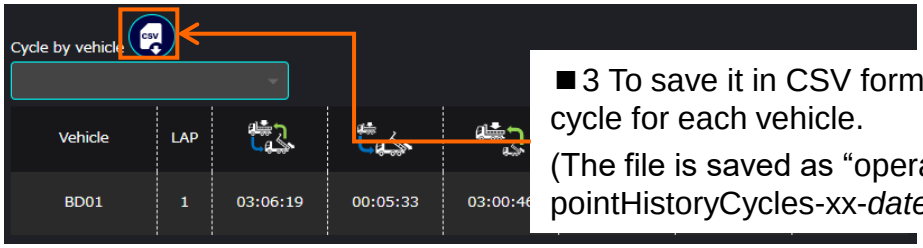
■1 Click next to “Date” and select the date (marked with a circle) on which you want to view the work history (this shows the work history corresponding to the selected date).



■2 To save it in CSV format, click .
(The file is saved as “operationHistory-daily-xx-*date*.csv”.)

The CSV file includes the point type, point, work date, time zone, vehicle, loading capacity, loading soil volume capacity, soil property, unit weight, loading machine, loading machine bucket volume, registration method, and editing category.

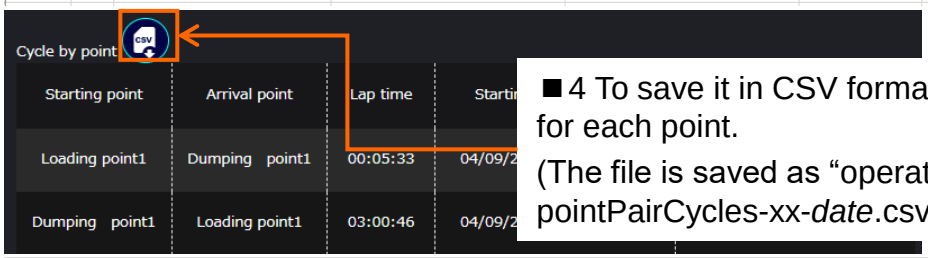
Point type	Point	Work date	Work time	Work time (ms)	Time zone	Vehicle	Work weight(kg)	Work soil volume(m3)	Soil properties	Weight of unit volume(t/m3)	Loading machine	Loading machine bucket volume(m3)	Registration method	Editing category
Loading point	Loading point1	2021/4/27	11:51:51	0	+09:00	dump1	9800	5.5	Soil	1	A	0.28	Auto	
Loading point	Loading point1	2021/4/27	12:01:05	231	+09:00	dump1	9800	5.5	Soil	1	A	0.28	Auto	
Loading point	Loading point1	2021/4/27	13:01:05	454	+09:00	dump2	9800	5.5	Soil	2	A	1.28	Auto	
Loading point	Loading point1	2021/4/27	14:01:05	127	+09:00	dump3	9800	5.5	Soil	3	A	2.28	Auto	



■3 To save it in CSV format, select next to the cycle for each vehicle.
(The file is saved as “operationHistory-daily-pointHistoryCycles-xx-*date*.csv”.)

The CSV file includes data on vehicle, LAP, loading -loading lap time, loading - unloading lap time, unloading- loading time, loading point, dumping point, return point, and registration method.

Vehicle	LAP	Loading - Loading lap time	Loading - Unloading lap time	Unloading - Loading lap time	Loading point	Dumping point	Return point	Registration method
BD01	1	0:06:49	0:06:43	0:06:06	Loading point1	Dumping point1	Return point1	Auto
BD02	2		6:38:24		Loading point1	Dumping point1		Auto
BD03	1	1:51:16	0:30:52	1:20:24	Loading point1	Dumping point1	Return point1	Auto



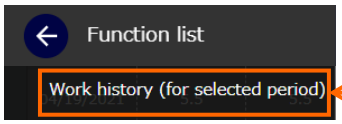
■4 To save it in CSV format, select next to the cycle for each point.
(The file is saved as “operationHistory-daily-pointPairCycles-xx-*date*.csv”.)

The CSV file includes data on starting point, arrival point, lap time, starting date and time, arrival date and time, and registration method.

Starting point	Arrival point	Lap time	Starting date	Starting time	Starting time (ms)	Starting time (Time zone)	Arrival date	Arrival time	Arrival time (ms)	Arrival time (Time zone)	Registration method
Loading point1	Dumping point1	0:05:33	2021/4/9	14:50:21	0	+09:00	2021/4/9	14:55:54	230	+09:00	Auto
Dumpingpoint1	Loading point1	3:00:46	2021/4/9	14:55:54	230	+09:00	2021/4/9	17:56:40	457	+09:00	Auto

■5-4 Work history (for selected period) (1/2)

Displaying work history

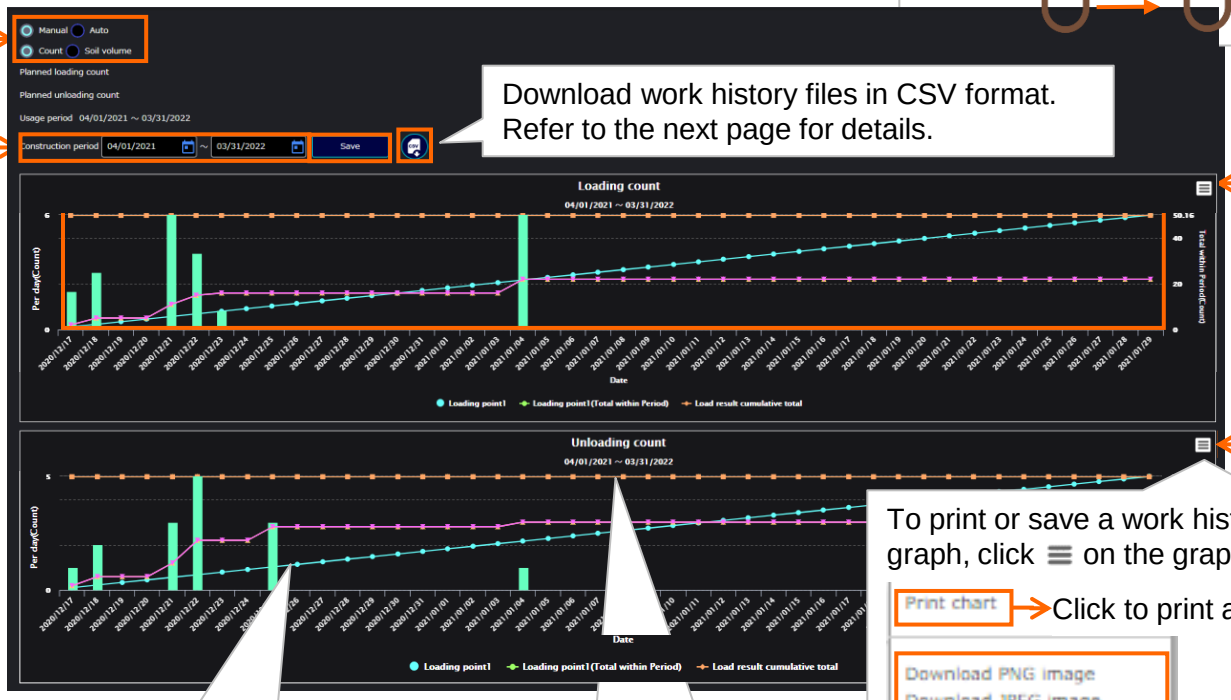


■1 Select “Work history (for selected period)”.

■2 Click next to each date to select the start and end dates of the period from which you want to collect data. Then, press the “Save” button.

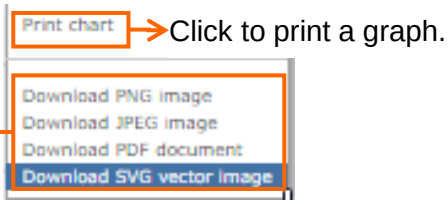
! The drawing is changed when you select the period, but the total is not reflected unless the data is saved.

By selecting the desired range in the graph with the mouse, only that range can be displayed.
* Drag the pointer from the start to the end of the range you want to display.



Download work history files in CSV format.
Refer to the next page for details.

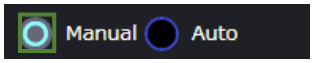
To print or save a work history graph, click ☰ on the graph.



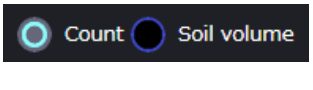
The graphs are saved in the following file formats:
・PNG ・JPEG ・PDF ・SVG

A target line that corresponds to the construction period and the planned value is depicted.

If a planned value is set to Traveling route, it is plotted at its corresponding point on the graph.



Counting loading/unloading operations can be switched between manual and auto.



The format of the graphs or charts can be switched between “Count” and “Soil volume”.

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■5-4 Work history (for selected period) (2/2)

Displaying the work history (for selected period)

! The history is not reflected in any of the following totals unless you click the “Save” button after selecting the period:

Load/unload results

Base	Loading point1	Loading point1	Loading subtotal	point2	Unloading subtotal	Load cumulative total	Unload cumulative total
Soil properties	soil	iridium	-	soil	-	-	-
04/09/2021	6		6	1	1	6	1
04/12/2021	1		1			7	1
04/19/2021		1	1			8	1
Total	7	1	8	1	1		

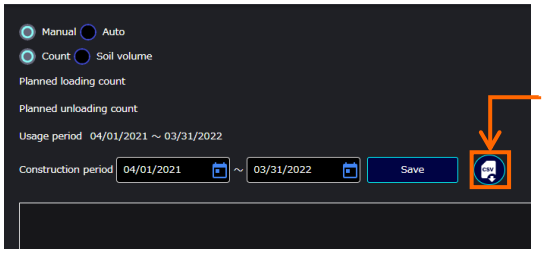
Results by vehicle

Vehicle	Loading point1	Loading sum total	point2	Unloading sum total
1	3	3		
BD01	5	5	1	1
Total	8	8	1	1

Displays the results (cumulative total and hourly) at each point in a work period.

Displays the results (cumulative total and hourly) for each machine in a work period.

Saving work history (for selected period)



■1 To save it in CSV format, select . (The file is saved as “operationHistory-period-xx-construction period start date-construction period end date.csv”.)

The CSV file includes the point type, point, work date, time zone, vehicle, loading capacity, loading soil volume capacity, soil property, unit weight, loading machine, loading machine bucket volume, registration method, and editing category.

Point type	Point	Work date	Work time	Work time	Time zone	Vehicle	Work weight(kg)	Work soil volume(m3)	Soil properties	Weight of unit volume(t/m3)	Loading machine	Loading machine bucket volume(m3)	Registration method	Editing category
Loading point	Loading point1	2021/4/9	14:37:44	595	+09:00	BD01	9800	5.5	soil	1.8		0.28		
Loading point	Loading point1	2021/4/9	14:38:13	617	+09:00	BD01	9800	5.5	soil			0.28		
Loading point	Loading point1	2021/4/9	14:38:17	249	+09:00	BD01	9800	5.5	soil	1.8		0.28		

■5-5 Manual/Auto count

Work history can be registered manually or automatically.

■1 For manual registration of the work history, the screen displays the data that you manually registered in the mobile application during loading/unloading..

! For details of how to manually register work history from the mobile application, refer to SMART CONSTRUCTION Fleet User Guide for Mobile Application.

■2 For auto-registration of the work history, the screen displays the data that was automatically registered in the mobile application during loading/unloading.

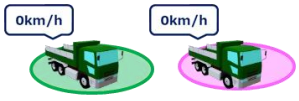
When “Auto work history correction” in the Construction site settings is ON, GPS position skipping and other anomalies are detected and unintended counts are excluded.

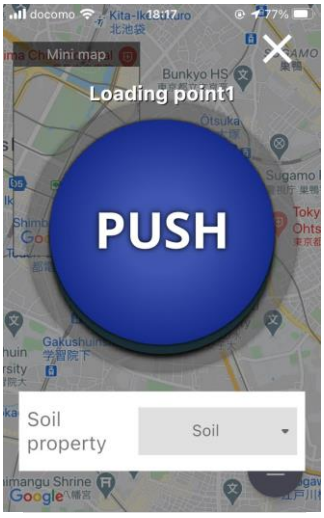
! Correct counting is possible even when a dump truck is waiting in the back row.

What is the “fixed time” in (2)?
→ Set it in the “Stop time (s)” setting in “4-1 Setting jobsites” or “5-9 Edit job site info”.

Flow of manual counting

(1) A machine stops in a work judgment area.
(2) On a driver’s mobile application, tap “PUSH”
→ Loading (unloading) + 1.

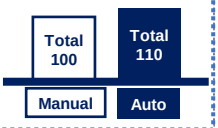




Flow of auto counting

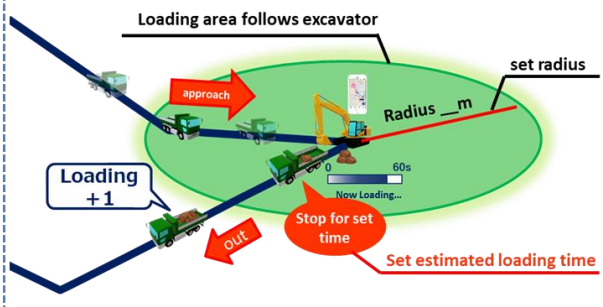
(1) A machine enters a work judgment area.
(2) A machine stops in a work judgment area for a set period of time.
(3) The machine leaves the work judgment area
→ Loading (unloading) + 1.

Since the manual count and auto count are separately cumulated, you can choose either manual count or auto count depending on an operation form in a jobsite.
A counting method can be selected with the button on the Work history confirmation screen.



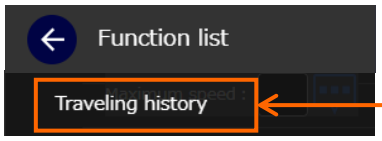
*** The PUSH button always pops up when a machine stops in a work judgment area.**

A work judgment area can be created around construction machinery (both in Auto-count and Manual count).



■5-6 Traveling history (1/7)

Displaying the traveling history of the desired date.



■1 Select “Traveling history”.

■ The error radius in the traveling history (detailed in “ Median error radius” in “5-6 Traveling history (4/7)”) can be set in the range from 10 to 500.

■ You can hide the speeds at and above the desired value (detailed in “5-6 Traveling history (6/7)”).

You can move the map by clicking on the map and then holding down the Shift key and pressing an arrow key.

■ Switches between showing and hiding the speed distribution.

Enlarges the map to full size.

■ Saves the traveling history in CSV format.

Clicking the icon selects/cancels all setting items (trajectory, speed, and azimuth) at once.

■ Zooms in/out the map.
* The map can be zoomed in/out by Ctrl + wheel, or right click + wheel.

Displays the machines that have been logged in on the day.

Desired inserted image

■ Prints or saves the currently displayed graph.

The screen can be reloaded while the selected trajectory, speed, and azimuth settings are retained.

■ By selecting the desired range in the graph with the mouse, only that range can be displayed.

If no GPS can be acquired, “NO GPS” appears in the icon on the map.
In the graph, this is shown with a red dot.

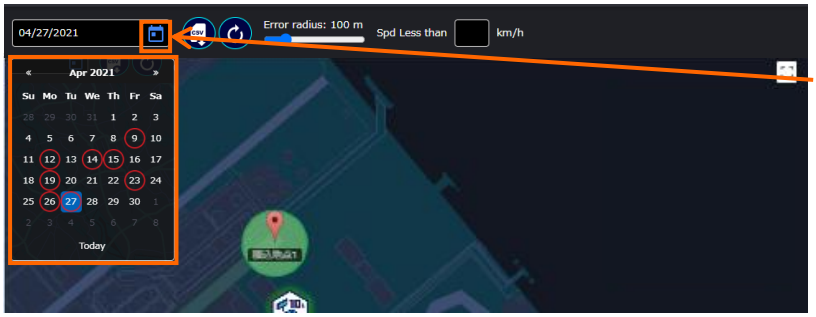
■ Displays the graph of travelling history.

Resizes the map or graph in the vertical direction.

■ The zoom setting can be returned.

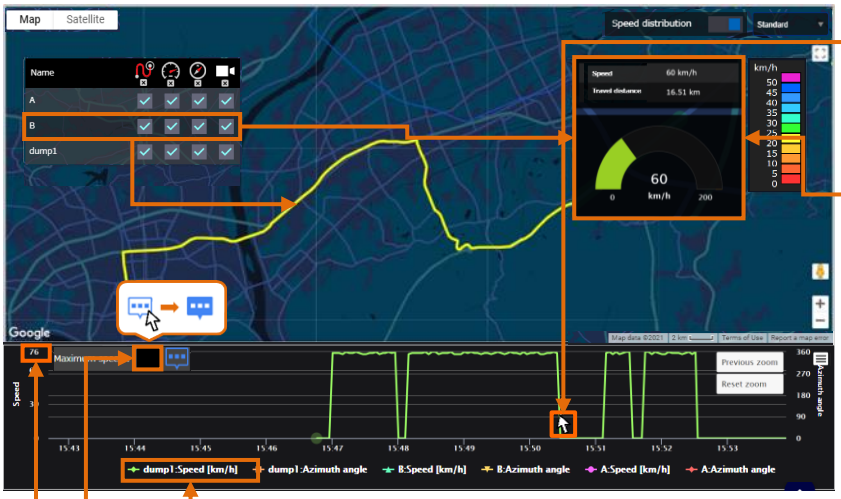
Previous zoom : Returns it to the previous zoom step.

Reset zoom : Resets zoom.



■2 Click next to “Date”, and select the date on which you want to view the traveling history.

■5-6 Traveling history (2/7)



■ Move the mouse pointer over the time at which you want to view the speed and travel distance.

■ Click the name to highlight the travel trajectory. The distance traveled and the meter will be displayed on the right side of the screen.

The speeds of terminals are calculated by their manufacturers' own methods and have nothing to do with the application. Note that the speed indicated on this screen may differ from the actual speed.

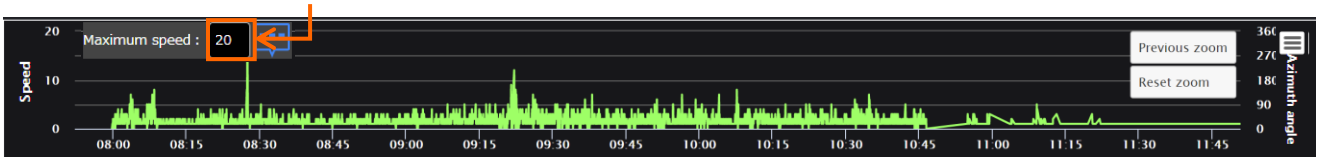
■ To show/hide the speed or azimuth indication, click the currently viewing traveling history name on the bottom of the graph.

■ Click 💬 icon to show comments that appear when you put the mouse pointer on the graph.
(Initial setting: OFF)

■ The actual maximum speed is shown on the top of the left vertical axis of the graph.

■For an excavator, the direction is drawn based on the information of the electronic compass of the smartphone.
If the speed of a vehicle other than an excavator is 10 km/h or more, the direction is drawn based on the latitude and longitude information of GPS.

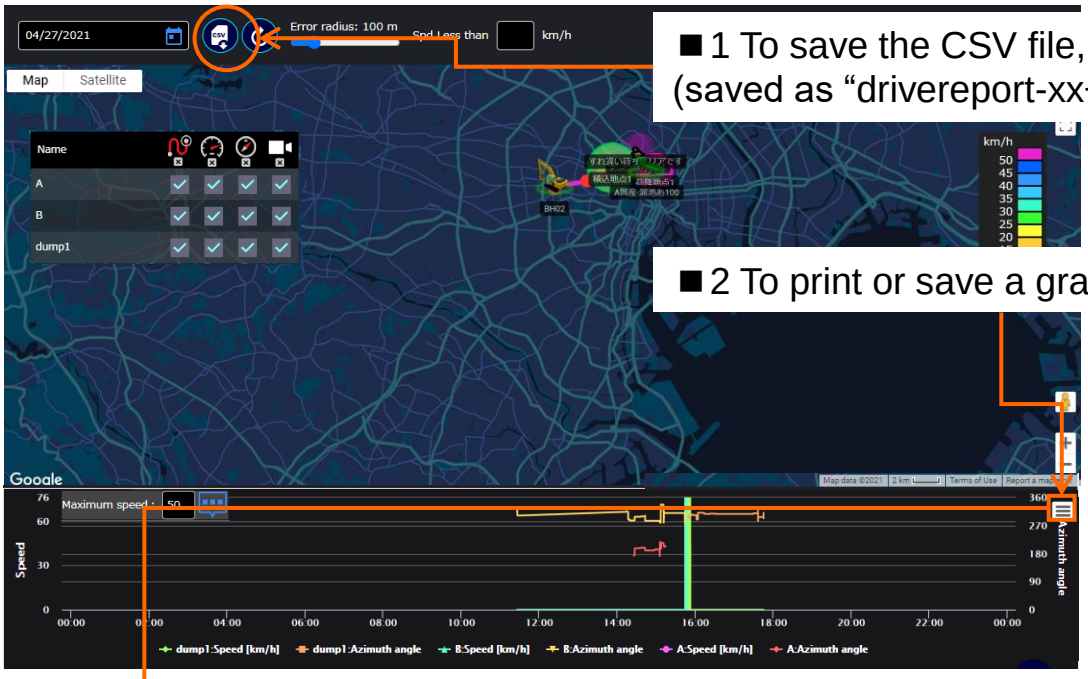
■ To change the maximum speed to be applied in the vertical axis of the graph, enter a desired maximum value in the field at the upper-left corner of the graph.



Wavering of the acquired position information may generate a numerical value of 0 or an impossible speed momentarily.

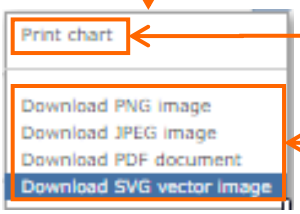
■5-6 Traveling history (3/7)

This function saves the driving history.



■1 To save the CSV file, select (saved as “drivereport-xx+*date*.csv”).

■2 To print or save a graph, click ☰



■ Click to print a graph.

■ The graph is saved in the following file formats; PNG, JPEG, PDF and SVG.

The CSV file includes data on travel date, travel time, travel time (ms), time zone, latitude, longitude, error radius, speed, azimuth angle, battery level (%), travel distance, device ID, unit ID, unit name, and loading capacity.

Travel date	Travel time	Travel time (ms)	Time zone	Latitude	Longitude	Error radius (m)	Speed (km/h)
2021/4/27	11:43:32	848	+09:00	35.73967632	139.7635194	65	0
2021/4/27	11:43:37	844	+09:00	35.73967632	139.7635194		0
2021/4/27	11:43:38	549	+09:00	35.7397042	139.7635478	65	0

Azimuth angle	Battery level (%)	Travel distance (km)	Unit ID	Unit name	Loading capacity
268.5761108	85	0	1373	B	
268.5761108	85	0	1373	B	
268.5761108	84	0	1373	B	

! The specifications for the acquisition of traveling history are described on and after the next page.

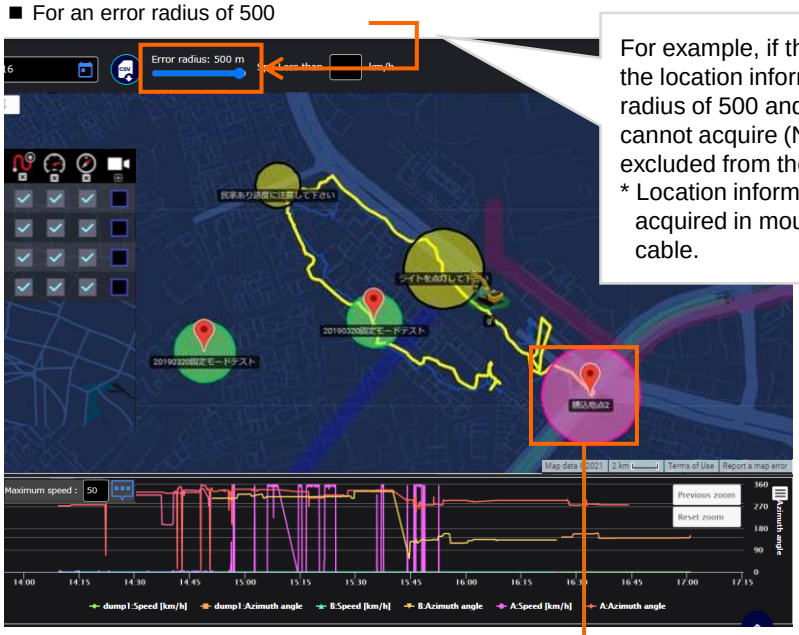
■5-6 Traveling history (4/7)

■ Median error radius

Location information might be deviated to some extent because it is acquired by GPS etc. By setting the error radius, only highly accurate data can be displayed from the acquired data.

The median error radius refers to a numerical value where “the terminal is likely to be within the radius centered on the acquired latitude and longitude”. The smaller the median error radius becomes, the more accurate the location information becomes.

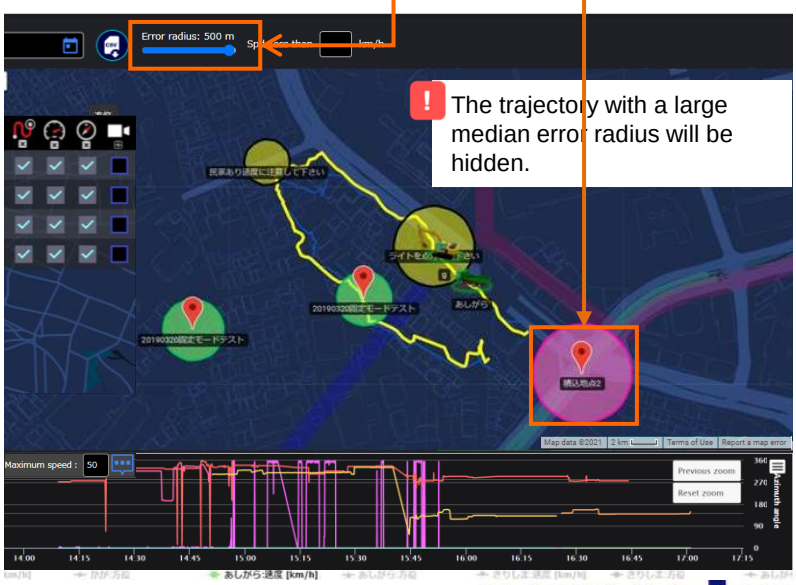
■ For an error radius of 500



For example, if the median error radius is set to 500, the location information outside a median error radius of 500 and the location information that GPS cannot acquire (No GPS appears in such cases) are excluded from the trajectory.

* Location information may not be successfully acquired in mountain areas or under a high voltage cable.

■ For an error radius of 500



The trajectory with a large median error radius will be hidden.

If there is a problem that no data can be acquired at all from GPS, the problem may result from some cause other than the application.

The location information acquired from GPS is sent to the server through mobile networks.
If the acquisition of location information from GPS fails, the most recently acquired location information is recorded every three seconds.

Even if a machine is traveling under a poor mobile network environment, it is possible to record the traveling history of the machine by moving it to an area that provides a good mobile network before it logs out of the application.

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■5-6 Traveling history (5/7)

Location information for travelling history is acquired from GPS every three seconds.
(However, it does not necessarily mean that a log is kept every three seconds.)

The information is acquired from GPS once at intervals of three seconds.

Travel date	Travel time	Travel time (ms)	Time zone
2019/4/25	8:22:41		-05:00
2019/4/25	8:22:42	999	-05:00
2019/4/25	8:22:47	999	-05:00
2019/4/25	8:22:50	999	-05:00
2019/4/25	8:22:53	999	-05:00
2019/4/25	8:22:56	999	-05:00
2019/4/25	8:22:59	999	-05:00
2019/4/25	8:23:02	999	-05:00
2019/4/25	8:23:06	604	-05:00
2019/4/25	8:23:09	605	-05:00
2019/4/25	8:23:12	605	-05:00
2019/4/25	8:23:15	604	-05:00
2019/4/25	8:23:18	604	-05:00
2019/4/25	8:23:21	610	-05:00

The specification defines that location information is acquired from GPS once at intervals of three seconds. (This does not mean that location information is acquired every three seconds.)

Data is successfully acquired from GPS.
(The timing (ms) at which a log is kept varies as occasion demands.)

Positional information is always recorded every three seconds even if it cannot be acquired from GPS.
(The timing (ms) at which a log is kept varies as occasion demands.)

If data cannot be acquired from GPS, difference occurs in time between the smartphone time clock and GPS.

Latitude	Longitude		Error radius (m)		Speed (km/h)	Azimuth angle
42.48596195	-87.86752626		85.38		13	147.8973694
42.48622122	-87.8675482		32.8		12	147.8973694
42.4863687	-87.86775766		32.8		9	149.940094
42.48643605	-87.86786587		32.8		8	151.9544525
42.48649954	-87.86797634		32.8		8	153.9859314
42.48656685	-87.86809084		32.8		8	155.9997253
42.48663277	-87.86821674		32.8		9	163.2224121
42.48668378	-87.86834573	Data is successfully acquired from GPS.	32.8		7	170.6370392
42.48668378	-87.86834573				0	158.4006805
42.48668378	-87.86834573				0	158.4197845
42.48668378	-87.86834573				0	155.3857117
42.48668378	-87.86834573				0	113.3424149
42.48668378	-87.86834573				0	45.75735092
42.48668378	-87.86834573				0	0.744502783

Data is successfully acquired from GPS.
↓
A terminal is very likely to exists within the specified radius, centered on the acquired latitude and longitude.

The acquisition of GPS data has failed, so the location information indicated in **the preceding line** is recorded.

The acquisition of GPS data has failed.
↓
The cells are left blank.

The “Error radius” cells that are left blank mean the acquisition of GPS data has failed. (“No GPS” appears on the Traveling history screen.)

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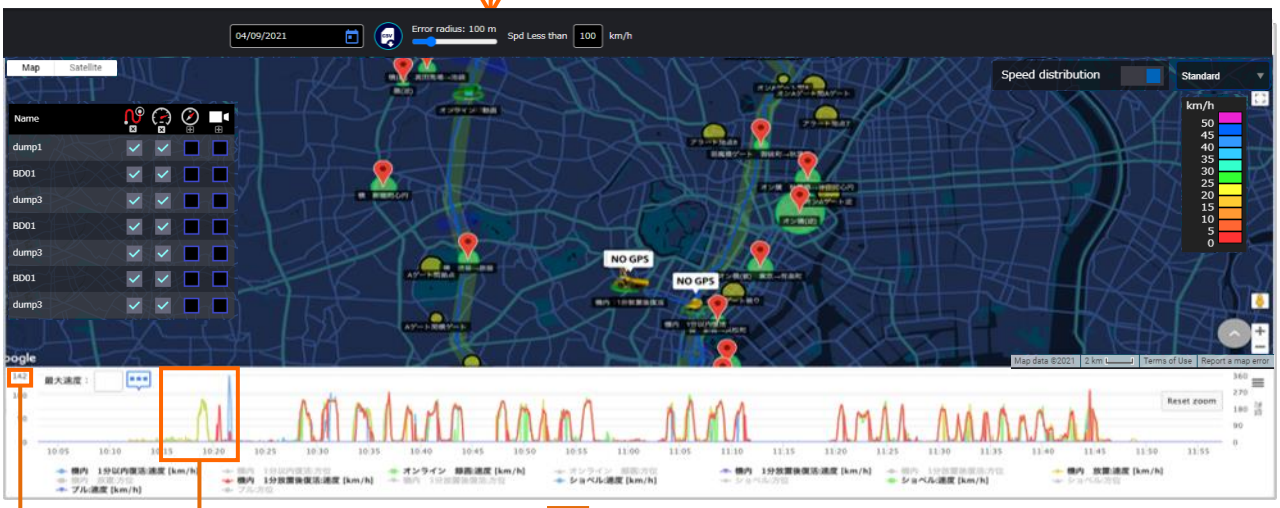
■5-6 Traveling history (6/7)

■ Hide speeds exceeding a given level

Because of the characteristics of acquiring speed with a single terminal, an impossible speed may be recorded momentarily; therefore, it can have an optional function of hiding outliers.

■ Enter a desired value in the cell and scroll down the screen, to hide the speeds exceeding the value you have entered.



Scroll down the screen.

■ The recorded speeds of 100 km/h or higher will be hidden.

■ The maximum speed on the top of the left vertical axis of the graph changes accordingly.

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■5-6 Traveling history (7/7)

Images recorded by the application are displayed on the traveling history

You can view the image of the vehicle specified by checking the checkbox ☑.

You can view an image zoomed in by clicking the photo. (Opens in a new tab.)

By placing the cursor over it, you can view the image recorded at that point.

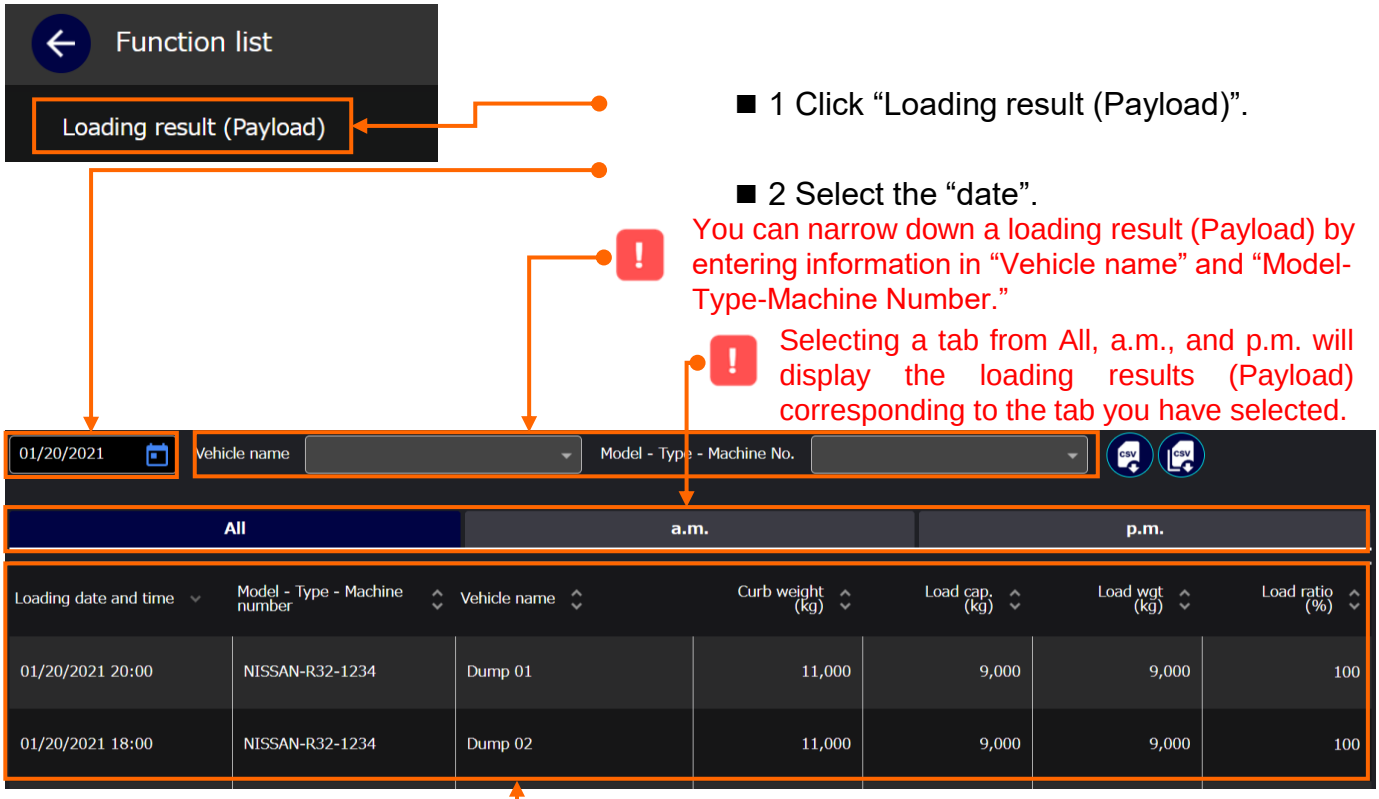
Placing the cursor over the graph shows a line indicating the time axis, allowing you to view the image recorded at that point.

■ The date and time when the image was registered is displayed.

■ The vehicle name is displayed.

! On the mobile application side,
- Images are taken when “Setting” → “Dashcam” are set to ON.
- If “Record only within point” is set to ON, images are recorded only in the loading or unloading point.
- Recording takes place at intervals of the “Recording interval” setting.
- Only images as displayed on the application screen are recorded.
- During image recording, “● REC” is displayed in the upper left of the screen.

■5-7 Loading result（Payload）



■ 1 Click “Loading result (Payload)”.

■ 2 Select the “date”.

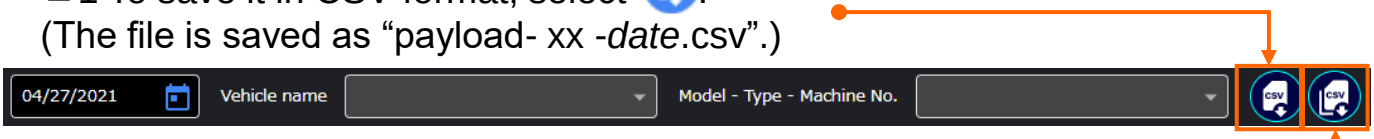
You can narrow down a loading result (Payload) by entering information in “Vehicle name” and “Model-Type-Machine Number.”

Selecting a tab from All, a.m., and p.m. will display the loading results (Payload) corresponding to the tab you have selected.

■ 3 The loading results you have selected are displayed.

Save loading result (payload) information

■ 1 To save it in CSV format, select .
(The file is saved as “payload- xx -*date*.csv”.)



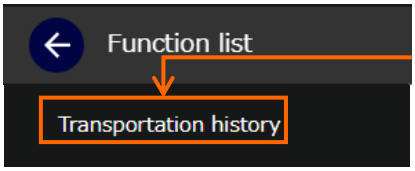
The data for all items can be downloaded.

The CSV file includes the load date, loading time, loading time (ms), time zone, Model - Type - Serial No., machine name, curb weight, loading capacity, load weight, and load ratio.

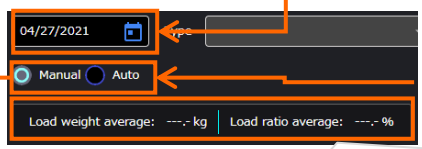
Load date	Load time	Load time (ms)	Time zone	Model - Type - Machine No.	Vehicle name	Curb weight (kg)	Loading capacity (kg)	Load weight (kg)	Load ratio (%)
2020/7/8	15:20:50	0	+09:00	NISSAN-R32-1234	BD01	26185	28000	27000	96
2020/7/8	11:15:40	0	+09:00	NISSAN-R32-1234	BD02	9800	9800	9000	91

■5-8 Transportation history (1/2)

You can check when, where, and which loading machine loaded and unloaded how much amount of what to which dump truck.



■1 Select “Transportation history”.

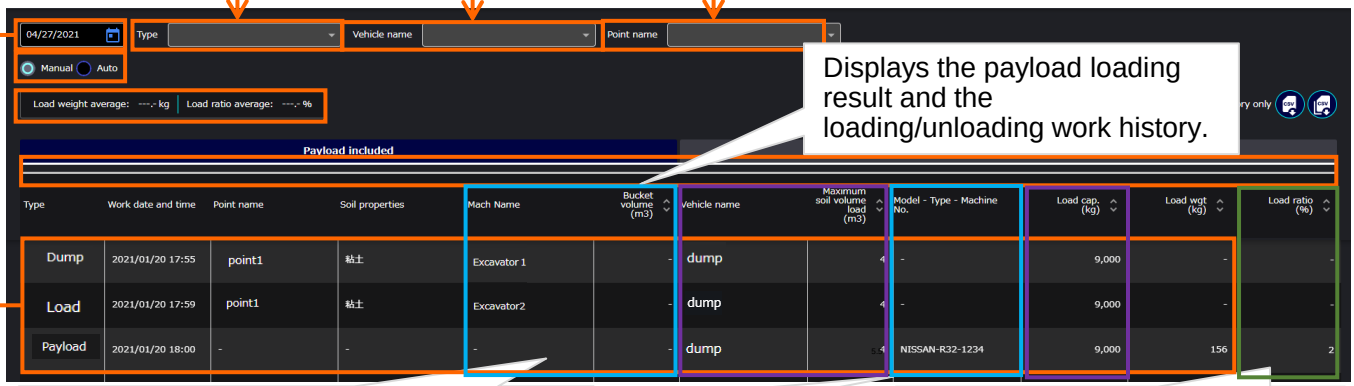


■2 Click next to the date and select the date on which you want to view the results.

■3 If necessary, switch between the manual and auto-loading/unloading results.

From the payload loading result, “Load weight average” and “Load ratio average” on the selected date are automatically calculated. * Load ratio = (Load weight / Loading capacity) x 100 [%]

■4 To narrow down the results to be displayed, click next to “Type”, next to “Vehicle name”, and/or next to “Point name”.



Displays the payload loading result and the loading/unloading work history.

Blue frame area: Displays information about the loading source.
Purple frame area: Displays information about the loading destination.

Displays information about the payload.

The load ratio is calculated by Load ratio = Load weight / Loading capacity.

Load : Displays the loading history that has been registered from the mobile application.

Dump : Displays the dumping history that has been registered from the mobile application. When dumping history is registered from the mobile application, soil property information is not included. It is registered using the soil property information in the corresponding loading history.
If the soil property information is not available in the latest loading history, “-” appears in the Soil properties cell.

Payload : Displays the data received from an external payload system instead of SMARTCONSTRUCTION Fleet.

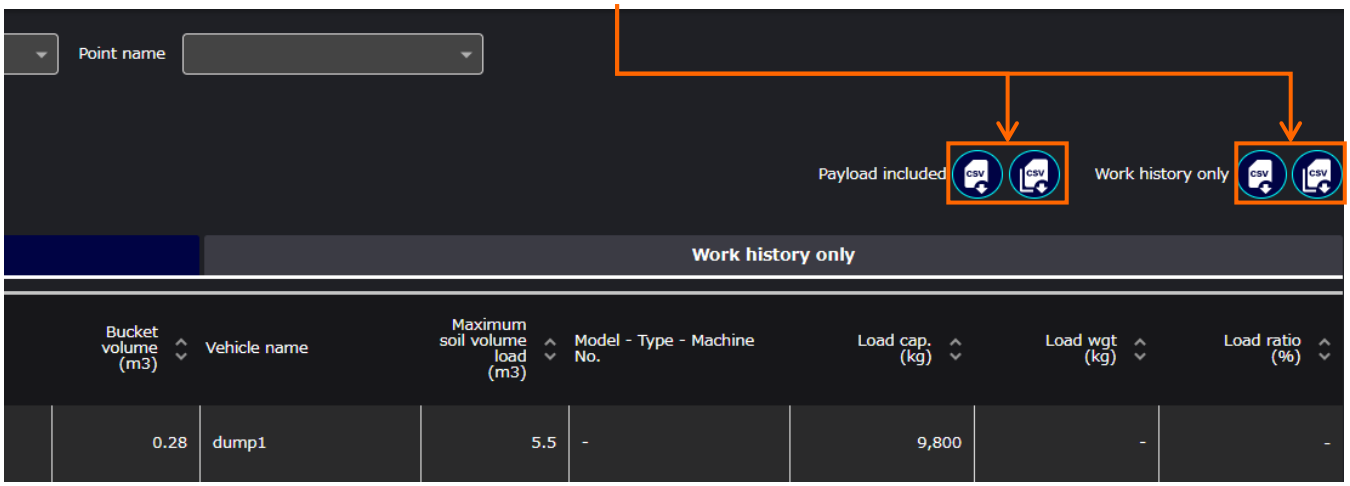
! The loading and dumping work history can also be viewed on the work history (daily) or work history (selected period) screen.
You can view the payload work history also on the loading result (payload) screen.

■5-8 Transportation history (2/2)

Saving the transportation history.

■1 Select  next to “Payload included” or “Work history only”.

(The file is saved as “transporthistory-xx -*date*.csv”.)

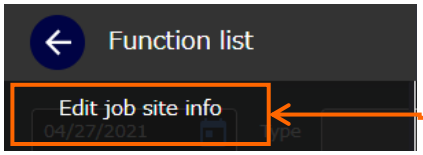


The CSV file includes the type, registration method, work date, work time, work time (ms), time zone, point name, soil property, machine name, bucket volume, machine name, loading soil volume capacity, load weight, load ratio, and vehicle latitude and longitude.
They include all work histories since the operation start date.

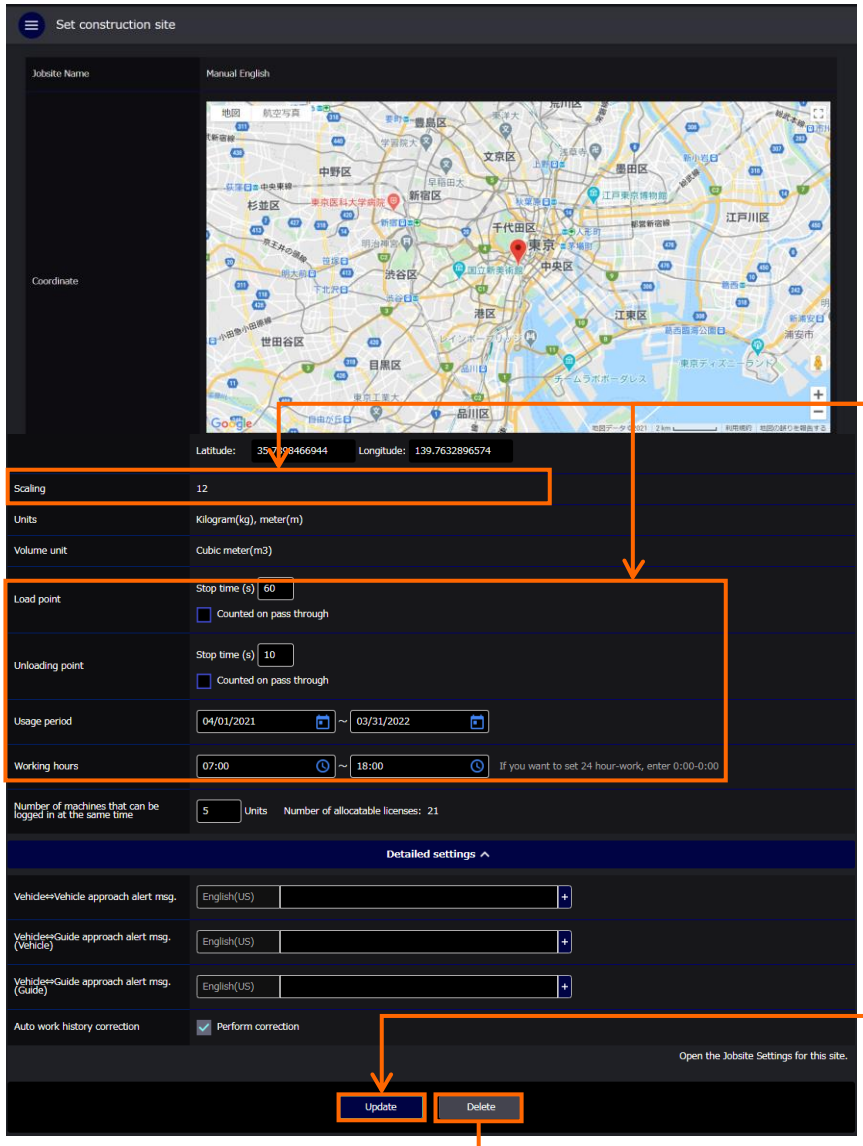
Type	Registration method	Work date	Work time	Work time (ms)	Time zone	Point name	Soil properties	Mach Name	Bucket volume(m3)
Load	Auto	2020/4/9	14:37:44	595	+09:00	point1	soil	dump1	0.28
Dump	Manual	2021/4/9	14:55:54	230	+09:00	point2	soil	dump1	0.28

Vehicle name	Maximum soil volume load(m3)	Model - Type - Machine number	Loading capacity (kg)	Load weight (kg)	Load ratio (%)	Vehicle latitude	Vehicle longitude
9800			35.6709146	139.7578253			
9800			35.6702277	139.7549378			

■5-9 Edit job site info



■1 Select “Edit job site info”.

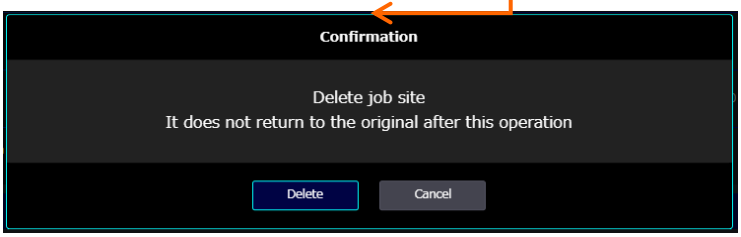


■2 Change the current setting information.

! No units, including volume units, can be edited.

! For details of the individual settings, see “4-1 Setting jobsites”.

■3 Click Update.



■ Clicking “Delete” displays the delete content confirmation dialog box.

Clicking “Delete” deletes the jobsite.

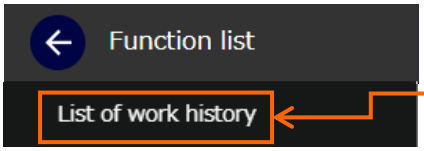
! **Be careful that once deleted, it cannot be undone.**

KOMATSU

■5-10 List of work history (1/3)

! All work done here is reflected in the “Work history (daily)”, “Work history (for selected period)”, and “Transport history” screens.

New registration of work history



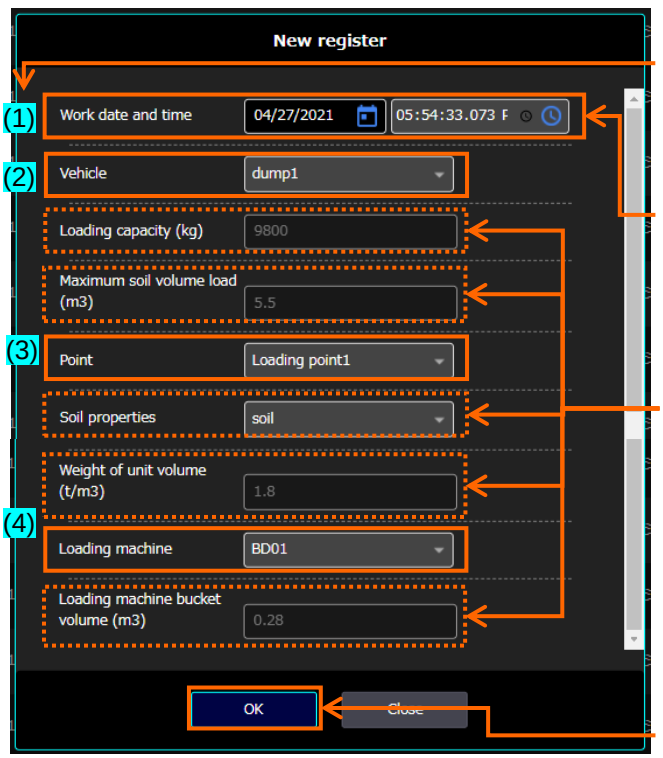
■1 Select “List of work history”.

■2 Select manual or auto-registration.

■3 Click “New register”.

The list of work history registered manually or automatically is displayed.

The work history that has been newly registered on the List of work history screen is indicated with “Create new” in the Editing category.



■4 Specify the (1) to (4) settings.

■ The initial values of the work date and time are the current date and time.
For the work time, enter the number of decimal point.

■ The setting items indicated in ⬚ will be automatically determined when you select options in the setting items from (2) to (4).
If you want to set a different value in any of these settings, enter the value manually.

■5 Select “OK”.

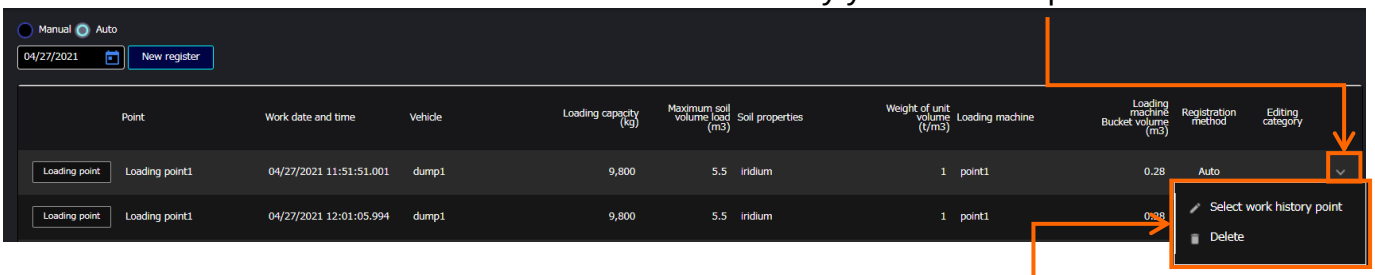
KOMATSU

■5-10 List of work history (2/3)

If a machine stops several times until it leaves a work judgment area after it has entered the area, several work histories are created accordingly. In such case, this application is specified to register the work history with the latest timestamp.
The “Select work history point” function allows you to replace the work history file that has been already registered with one of the work history files that have not been selected.

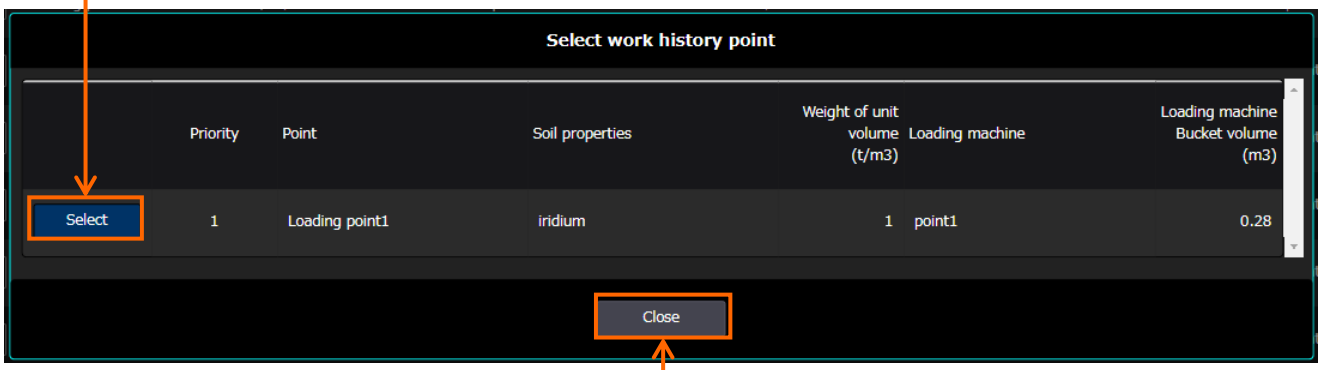
Change the work history point

■1 Click ⌄ on the right end of the work history you want to replace.



■2 Click “Select work history point”.

■3 The Select work history point screen appears. Select the work history you want to register.

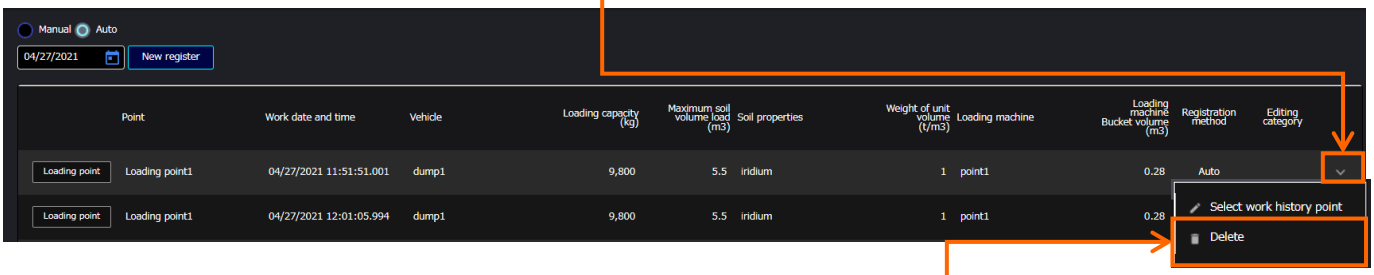


■4 Confirm that the change has been made to the List of work history. Then click “Close”.

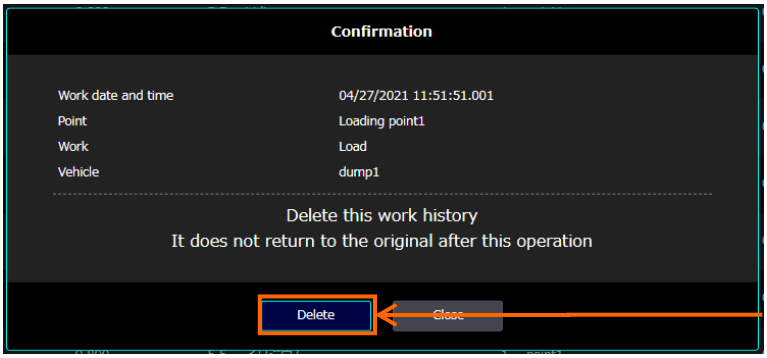
■5-10 List of work history (3/3)

Delete the work history

■1 Click on the right end of the work history you want to delete

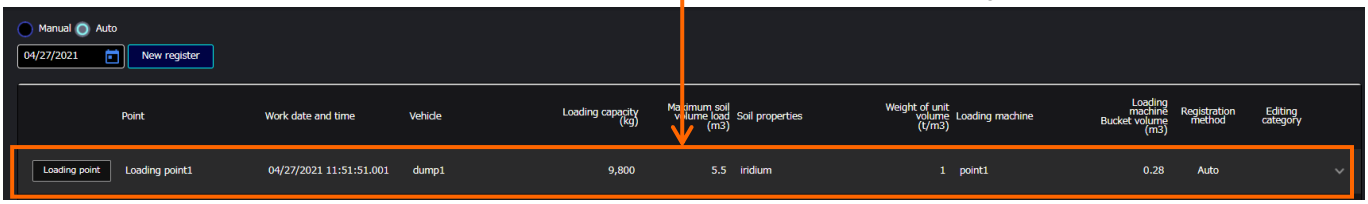


■2 Click “Delete”.



■3 Confirm the information shown on the Confirmation dialog box, and click “Delete”.

■4 Confirm the information shown on the Confirmation dialog box, and click “Delete”.



Note that once the work history has been deleted, the deleted work history cannot be restored.

■5-11 Daily Report (1/19)

■About daily report

Daily report is a function that allows you to organize the data acquired with SMART CONSTRUCTION Fleet (loading/unloading history, traveling history) into various tables and graphs, arrange it in an easy-to-use form for the jobsite, and output it to a PDF file or print it. This feature allows you to check the following daily items without hassle:

- From where to where, what, and how much did it transport? (daily/weekly/monthly)
- From where to where what, and how much did it transport? (cumulative total)
- Have the loading/unloading operations been completed as planned?
- Was the loading-to-loading cycle time on time as expected?
- Are there any points where dump trucks stopped significantly frequently in the transportation route?
- What is the percentage of downtime for each dump truck?

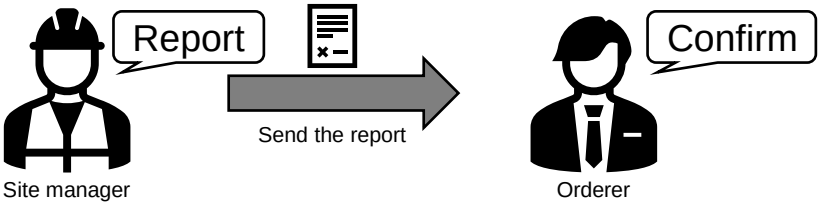
■ Expected utilization

Examples of utilizing it in the jobsite

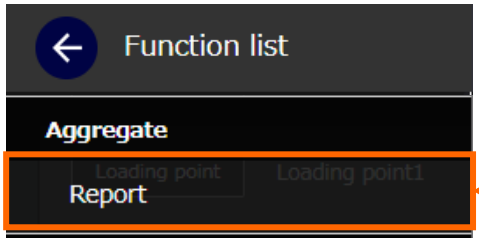
Site manager ... Checking whether the loading/unloading operations have been completed as planned.
Checking whether the loading-to-loading cycle time was on time as expected.
Checking whether there is one or more points where dump trucks stopped significantly frequently in the transportation route.
Checking the percentage of downtime for each dump truck.

Examples of utilizing it externally

Site manager → Orderer or prime contractor … Reporting how much what was transported from where to where (weekly).
Reporting how much what was transported from where to where (cumulative total).



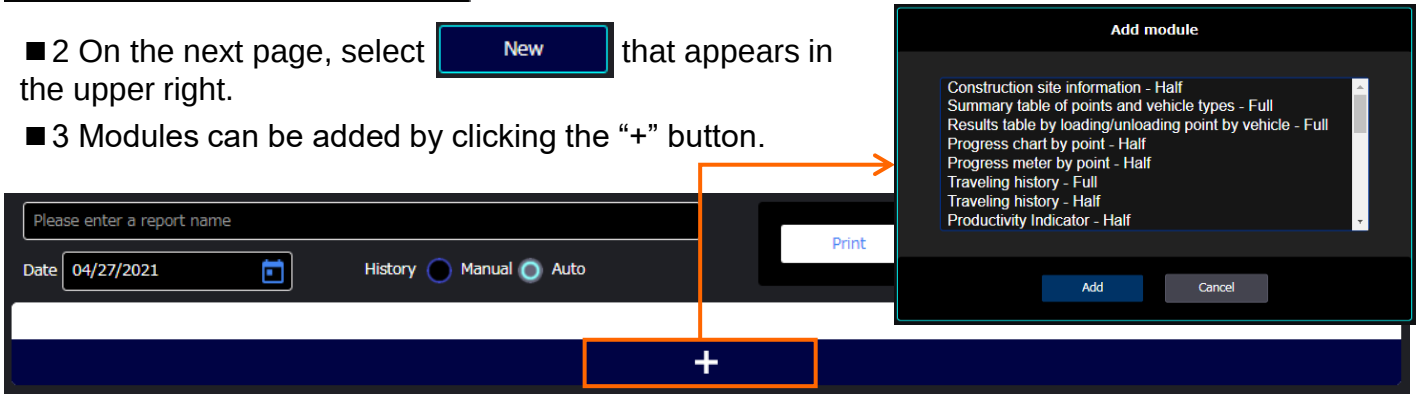
■5-11 Daily Report (2/19)



■1 Select “Report” from “Function list”.

■2 On the next page, select New that appears in the upper right.

■3 Modules can be added by clicking the “+” button.



! Modules are graphs, tables, etc. that can be added to a report.

■ Basic operations

■ Enter the report name

■ Date selection

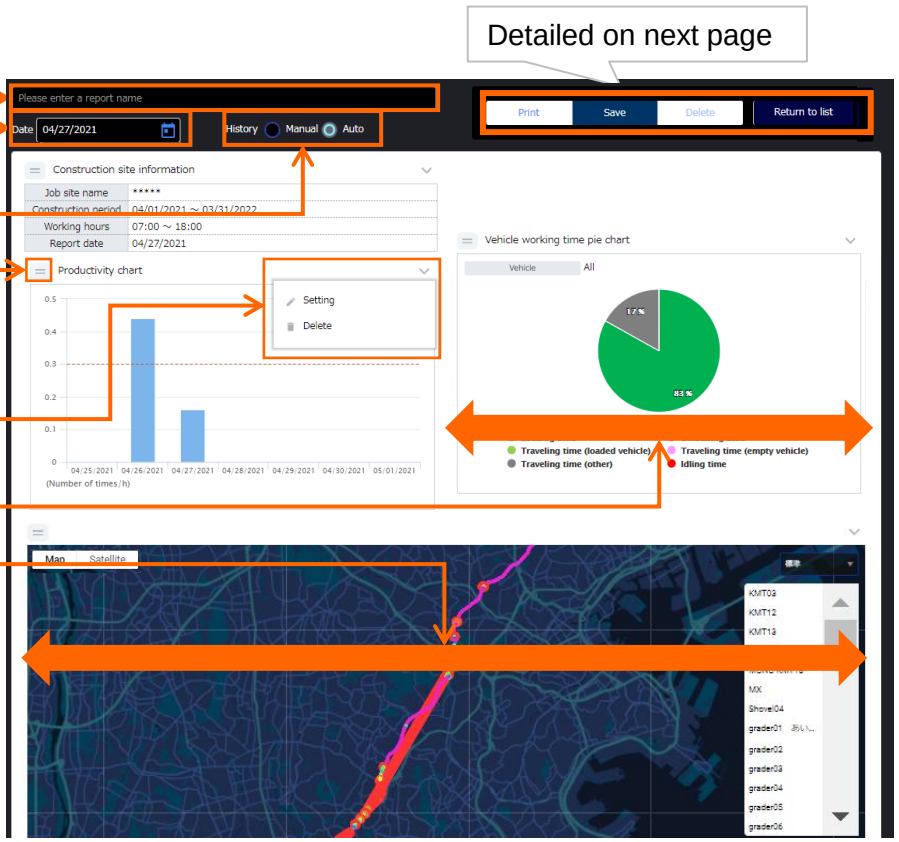
■ Manual/auto selection

■ You can move a module by drag and drop.

■ You can click to perform “Setting” or “Delete” operation.

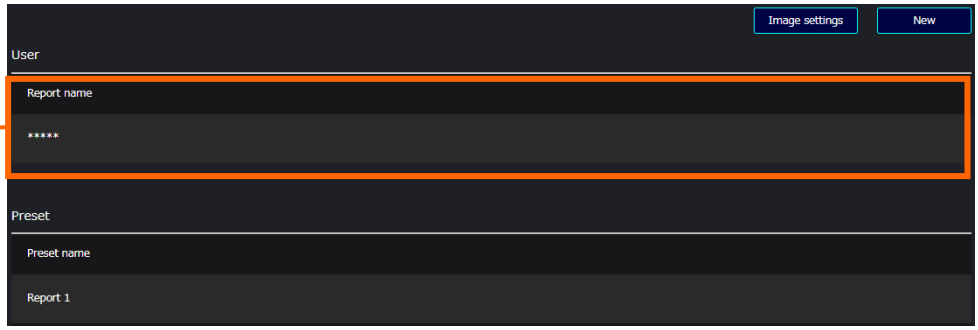
■ Half-width module

■ Full-width module



■5-11 Daily Report (3/19)

How to save the report after creating it

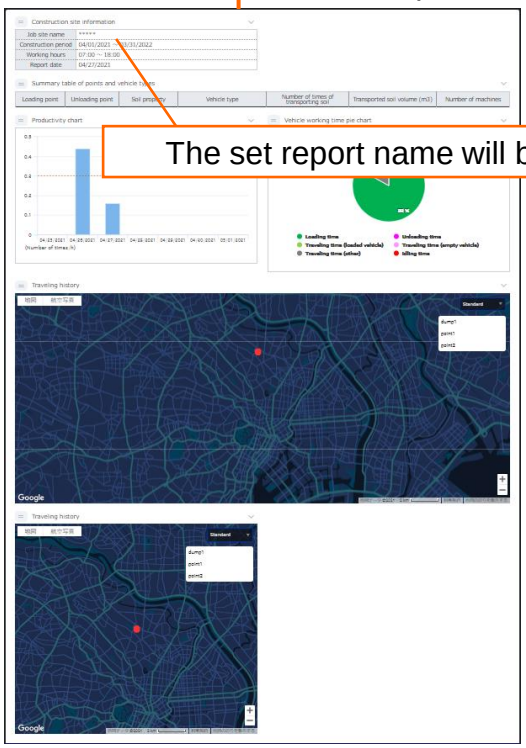


■ By clicking “Save”, it is saved in the “User” field of the “List page”.

If “No report name has been entered” or “No module exists”, the “Save” button will be disabled.

■ ”Preset” is a report with modules pre-selected.
Three types of presets are available.

■ “Image settings” is a menu for setting the images to be added to the report.



■ Using the “Print” button, the created report can be printed or saved to a file such as PDF.

■5-11 Daily Report (4/19)

Module list

Modules are graphs, tables, etc. that can be added to a report.

Construction site information-Half

Summary table of points and vehicle types– Full

Results table by loading/unloading point by vehicle– Full

Progress chart by point– Half

Progress meter by point– Half

Productivity Indicator– Half

Productivity chart– Half

Traveling history– Full

Traveling history– Half

Production volume progress chart– Full

Daily transportation chart– Full

Daily transportation chart by material– Full

Operating status table by vehicle– Full

Productivity chart by vehicle– Half

Vehicle working time pie chart– Half

Cycle time histogram – Half

Cycle time table – Half

Operating status of construction sites– Half

Workload table by vehicle– Full

Working time table by vehicle– Full

Working time bar chart by vehicle– Full

Transportation history time chart– Full

Cycle diagram – Full

image – Full

image – Half

■5-11 Daily Report (5/19)

Description of the modules

■ Construction site information - Half

Construction site information

Job site name	*****
Construction period	04/01/2021 ~ 03/31/2022
Working hours	07:00 ~ 18:00
Report date	04/27/2021

■ Summary table of points and vehicle types - Full

■ Displays the list of loading-unloading point pairs and the list for each soil property.

Summary table of points and vehicle types

Loading point	Unloading point	Soil property	Vehicle type	Number of times of transporting soil	Transported soil volume (m3)	Number of machines
Loading point1	point1	soil	On-Road Dump Truck	1	5.44	1

! If loading-unloading data cannot be acquired as a pair, it will not be reflected in the schedule.

Summary table of points and vehicle types

Loading point	Unloading point	Soil property	Vehicle type	Number of times of transporting soil	Transported soil volume (m3)	Number of machines

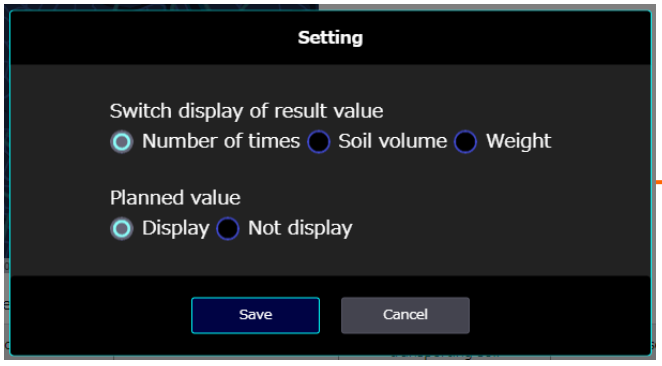
■ Results table by loading/unloading point by vehicle - Full

Results table by loading/unloading point by vehicle

Vehicle	Soil property	Loading point	Unloading point	Results (Number of times)	Plan (Number of times)
BD01	soil	Loading point1	Dumping point2	1	

■ Shows the count, the soil volume, or the weight of the loaded vehicle or the loading/unloading point. The value to view can be switched by display switching.

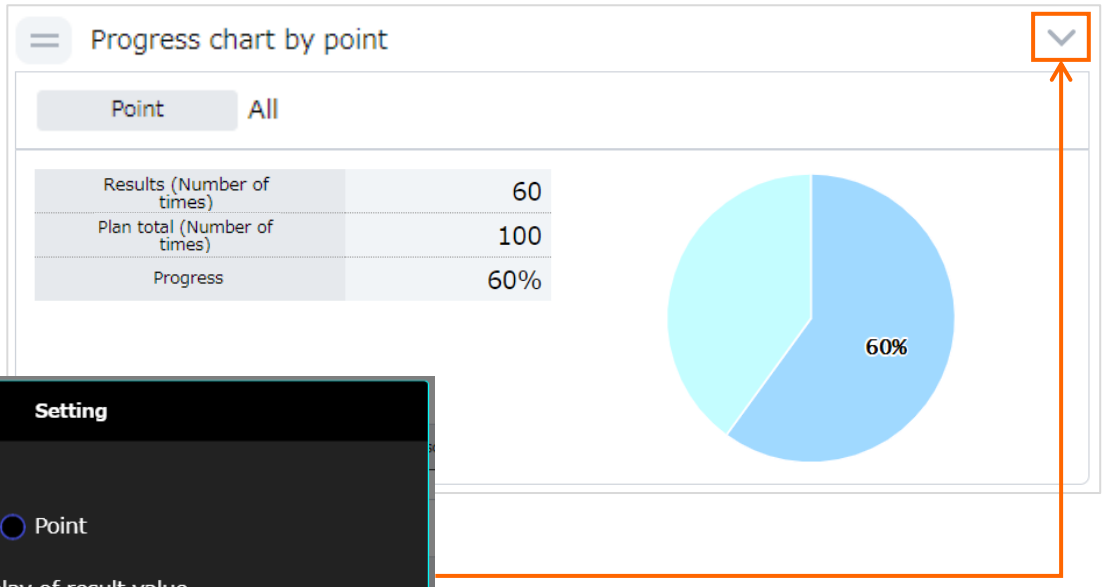
■ Displays the planned value set for the vehicle.

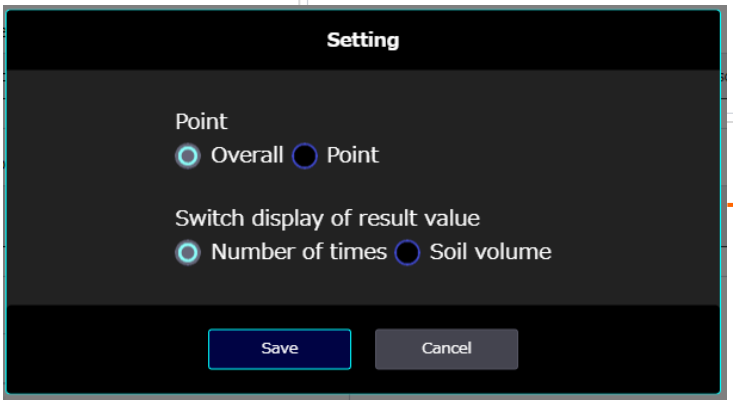


■ It is possible to switch the display between the result value and planned value in the Setting dialog.

■ 5-11 Daily Report (6/19)

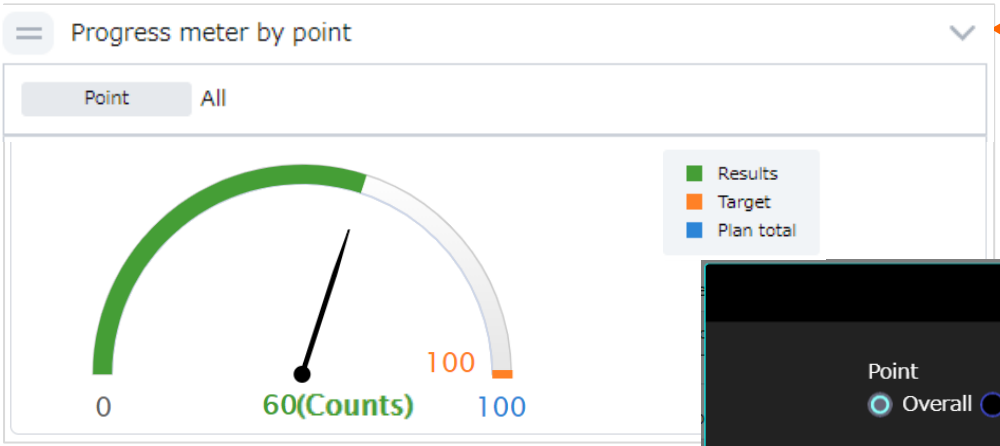
■ Progress chart by point - Half

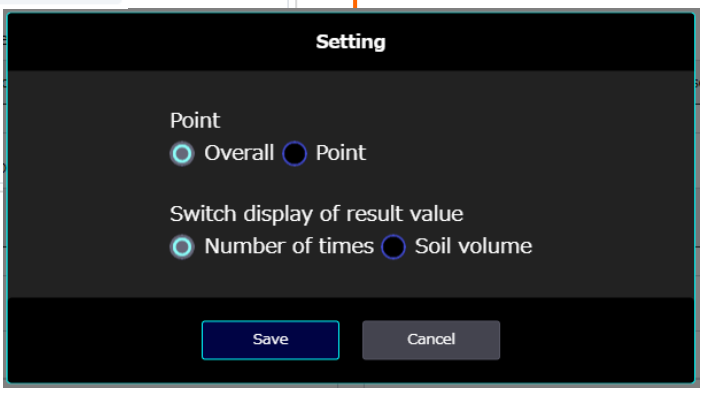




■ It is possible to switch the display of “Overall/Point” and result value in the Setting dialog.

■ Progress meter by point- Half

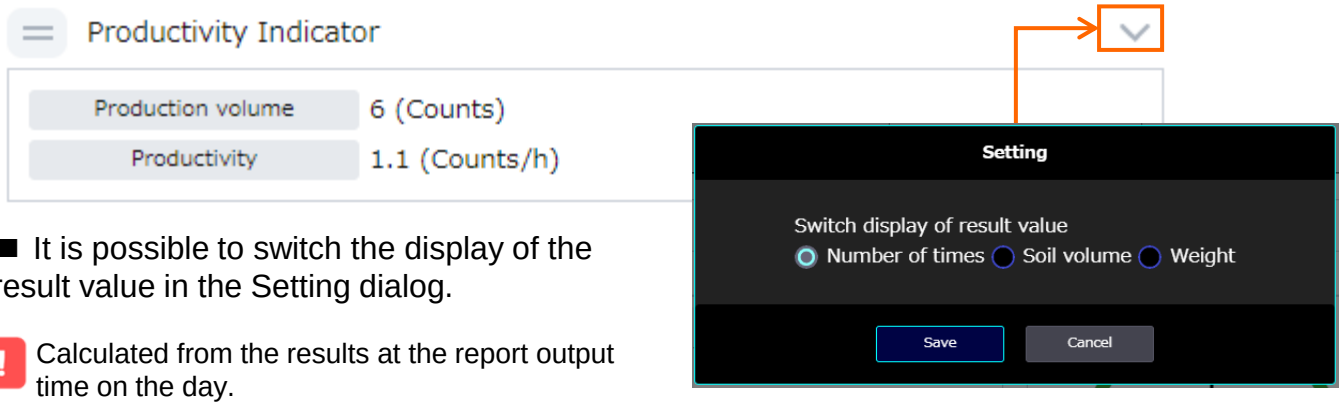




■ It is possible to switch the display of “Overall/Point” and result value in the Setting dialog.

■5-11 Daily Report (7/19)

■ Productivity Indicator - Half

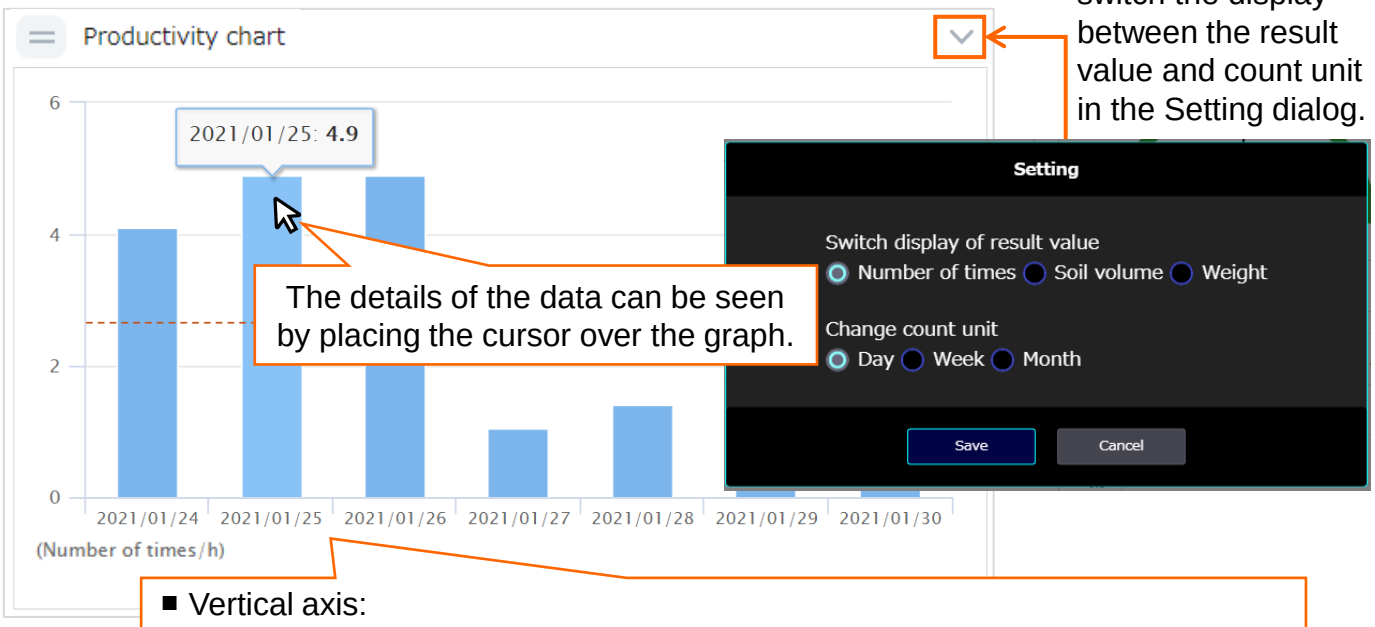


■ It is possible to switch the display of the result value in the Setting dialog.

! Calculated from the results at the report output time on the day.
Production volume = Total loading count
Productivity = Production volume / Total operating time of all dump trucks

■ Productivity chart - Half

■ It is possible to switch the display between the result value and count unit in the Setting dialog.

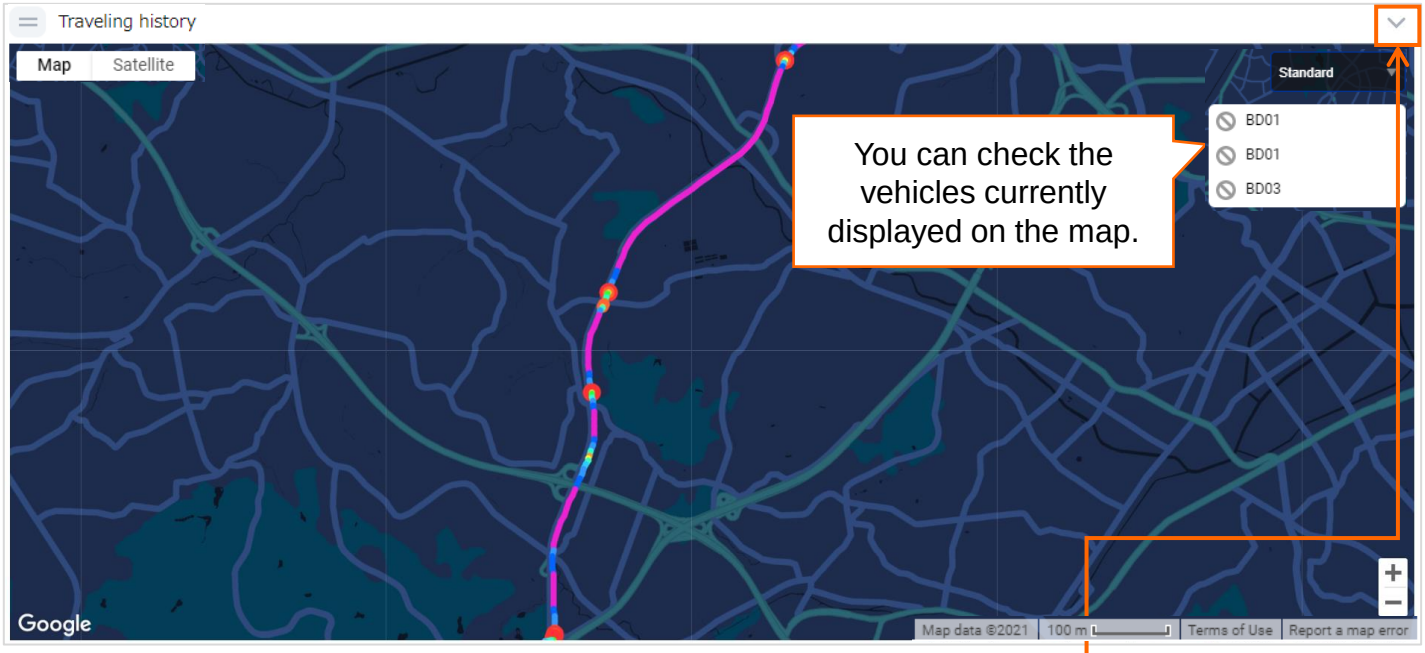


The details of the data can be seen by placing the cursor over the graph.

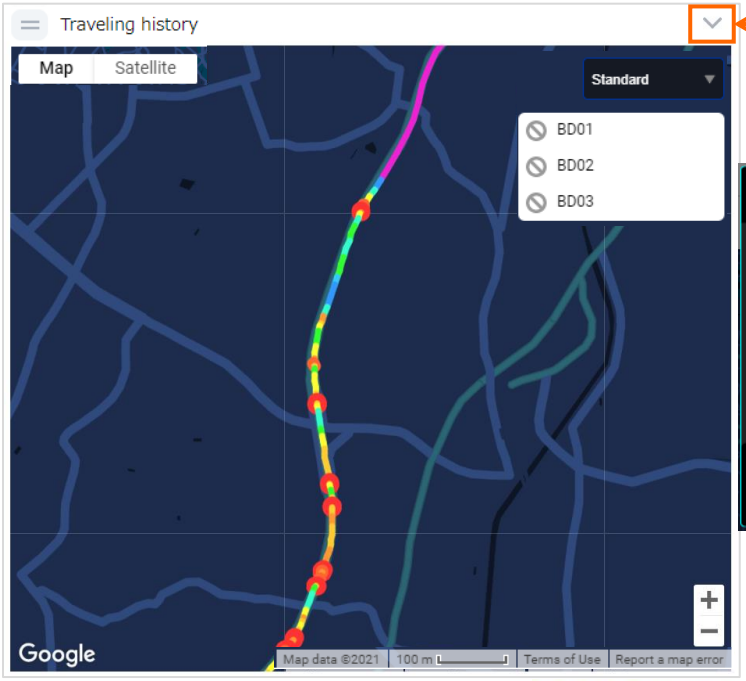
■ Vertical axis:
Total count, soil volume, or weight of the loading result.
■ Horizontal axis:
Content displayed
By month: Shows the month pointed out and the last seven months.
By week: Shows the week of the date pointed out and the last seven weeks.
By day: Shows the date pointed out and the last seven days.

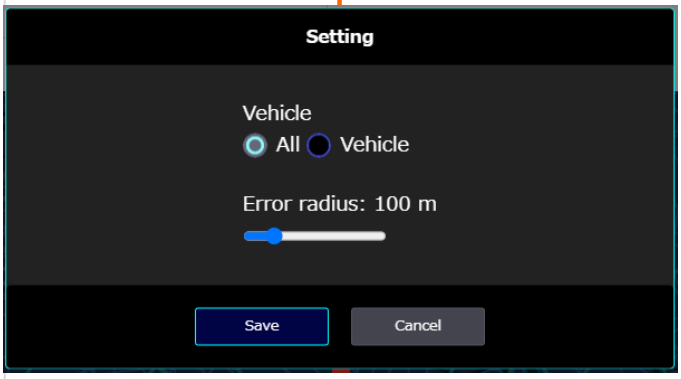
■ 5-11 Daily Report (8/19)

■ Traveling history - Full



■ Traveling history - Half

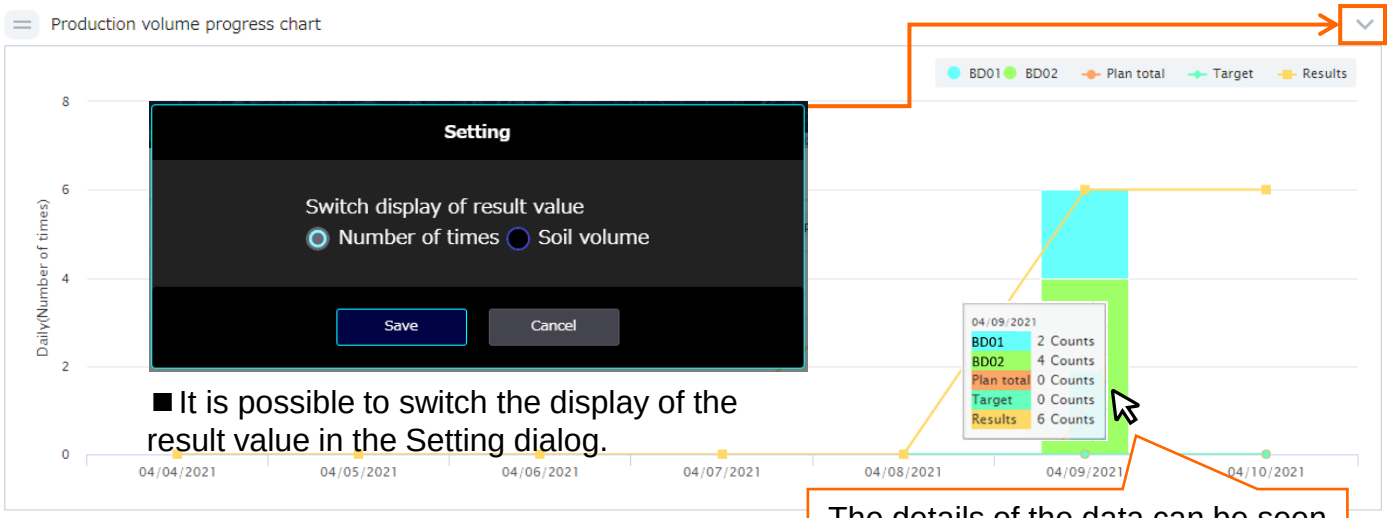




■ You can set “Select vehicle” and “Error radius” in the Setting dialog.

■5-11 Daily Report (9/19)

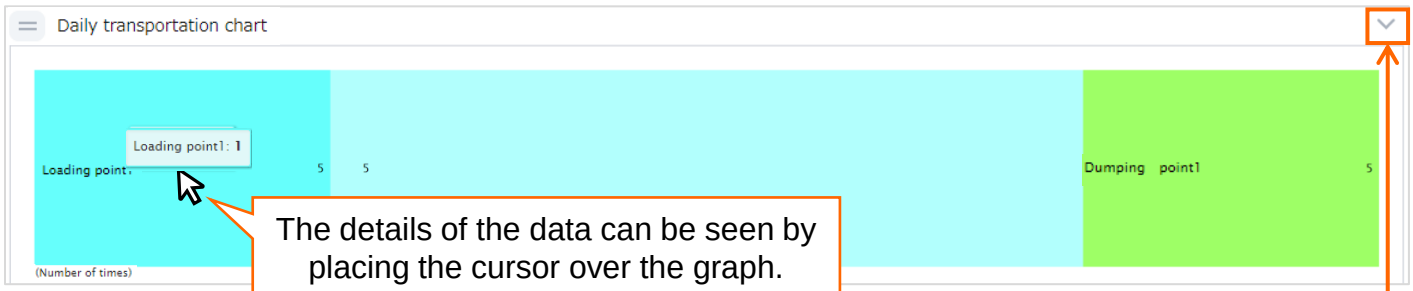
■ Production volume progress chart- Full



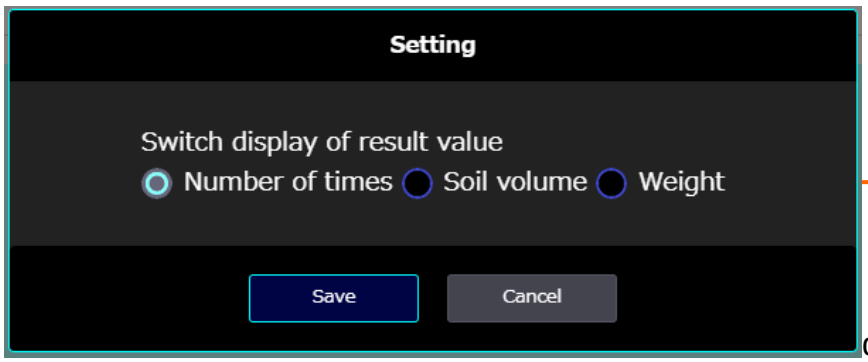
■It is possible to switch the display of the result value in the Setting dialog.

The details of the data can be seen by placing the cursor over the graph.

■ Daily transportation chart - Full



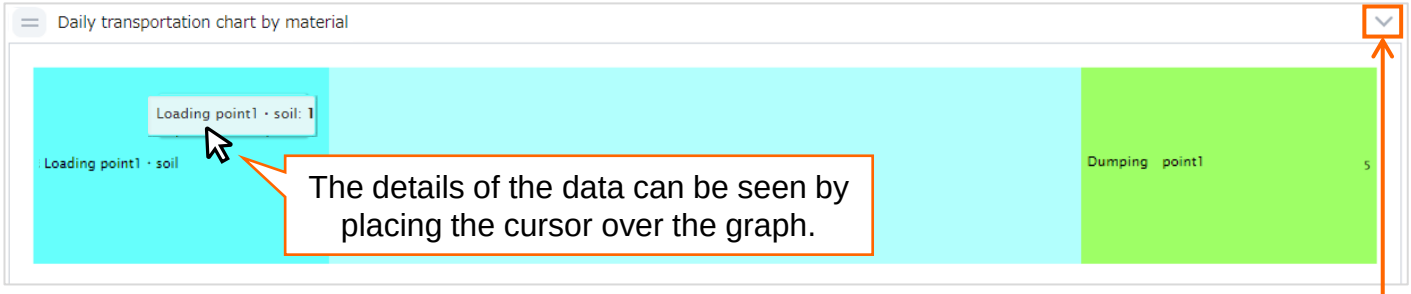
The details of the data can be seen by placing the cursor over the graph.

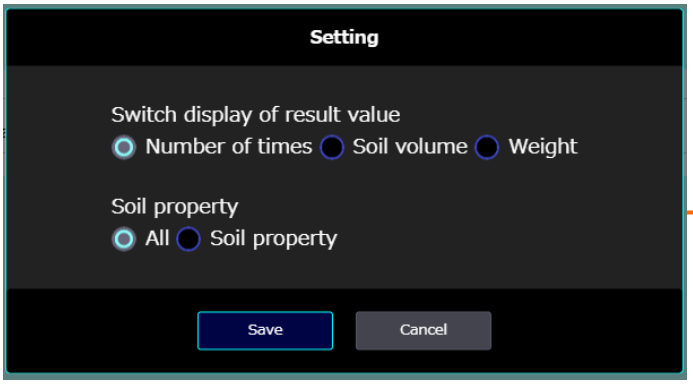


■It is possible to switch the display of the result value in the Setting dialog.

■5-11 Daily Report (10/19)

■ Daily transportation chart by material - Full



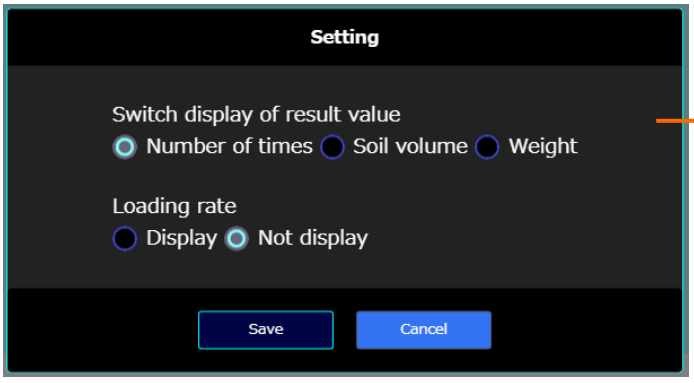


■It is possible to switch the display of the result value in the Setting dialog.

■ Operating status table by vehicle- Full

Operating status table by vehicle

Vehicle	Vehicle type	Start	Finish	Work time	Prod. vol. (Number of times)	Productivity (Number of times/h)	Idle rate (%)	Ave. cycle time (min)	Ave. load time (min)
BD01	On-Road Dump Truck	04/09/2021 14:27	04/09/2021 16:24	01:56	2	1	85	0	2
BD02	On-Road Dump Truck	04/09/2021 14:27	04/09/2021 17:59	03:32	4	1	69	186	2



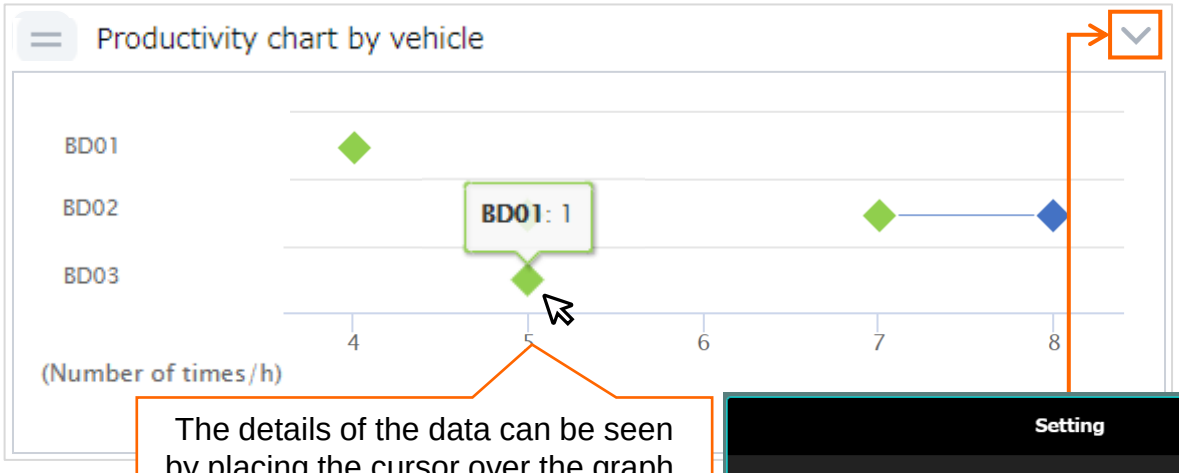
■It is possible to set the display of the result value and loading rate in the Setting dialog.

! Idling rate = Percentage of downtime unrelated to loading/unloading operations

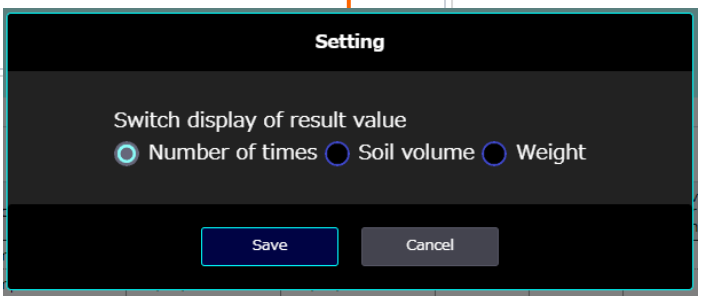
! The loading rate is the loading rate by the payload function.

■5-11 Daily Report (11/19)

■Productivity chart by vehicle– Half



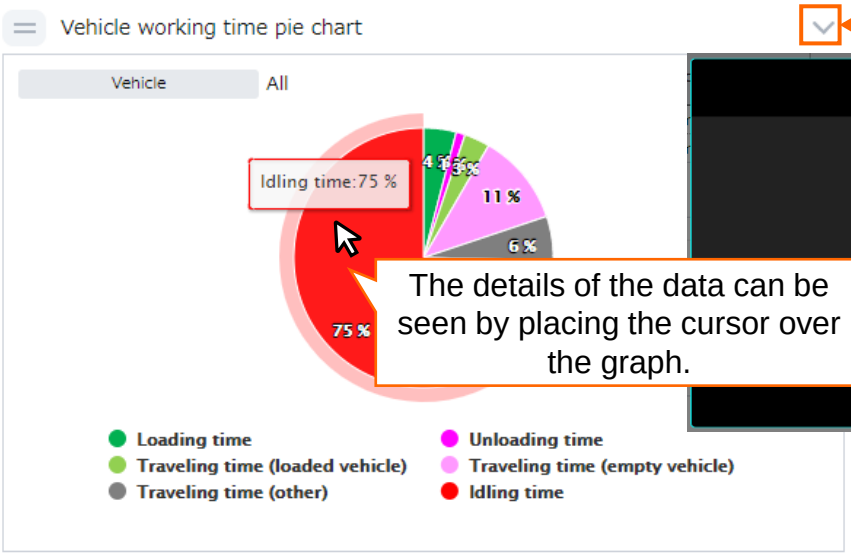
The details of the data can be seen by placing the cursor over the graph.



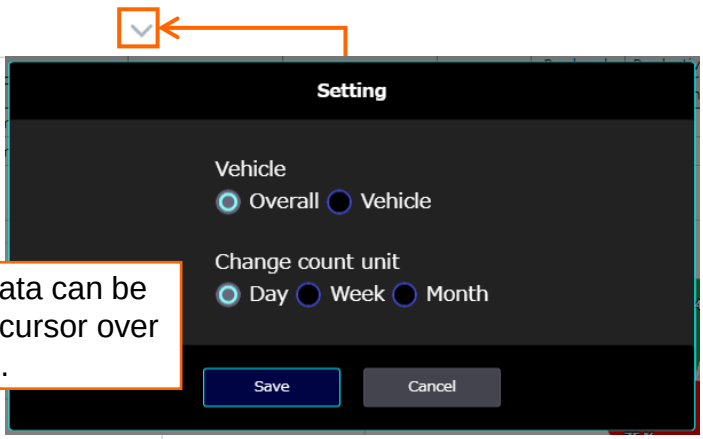
■It is possible to switch the display of the result value in the Setting dialog.

Out of the result values from the date to five days ago,
The maximum and minimum values are displayed as ◆.
The result value of the specified date is displayed as ◆.

■ Vehicle working time pie chart– Half



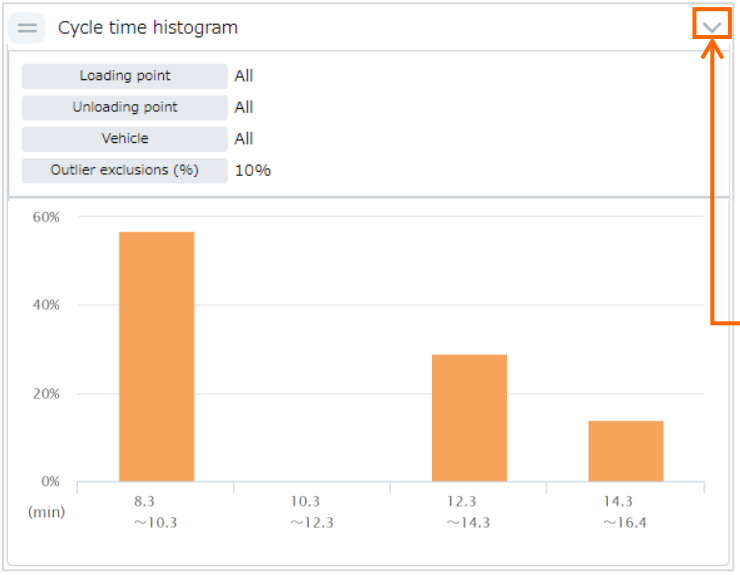
The details of the data can be seen by placing the cursor over the graph.



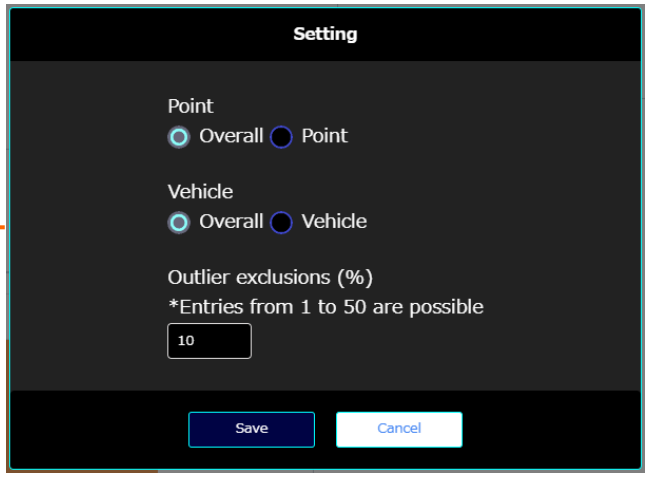
■It is possible to switch the display of “Overall”/”Vehicle” and “Change count unit” in the Setting dialog.

■5-11 Daily Report (12/19)

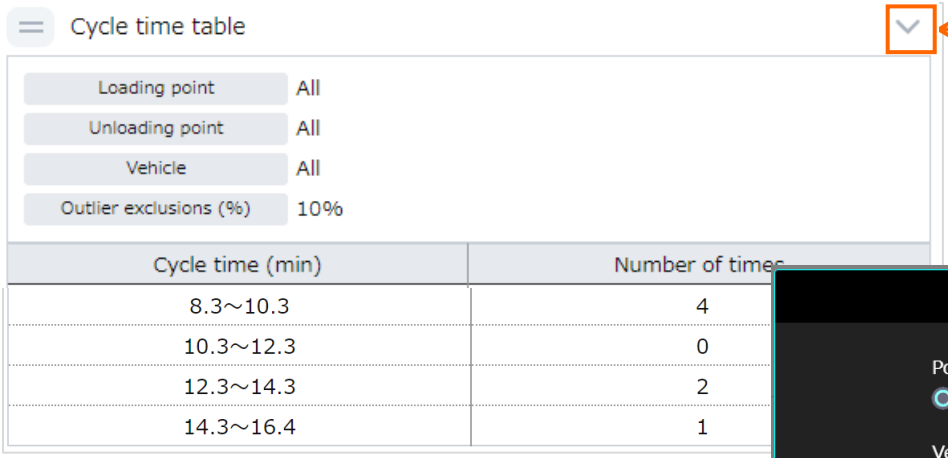
■ Cycle time histogram - Half



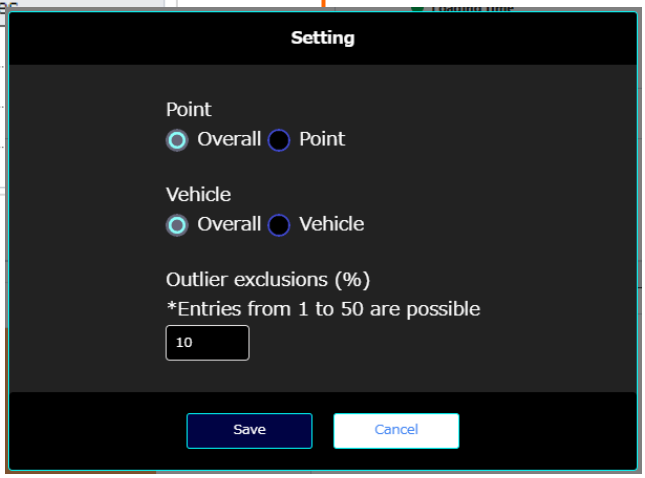
■It is possible to set the display of “Point”, “Vehicle”, and “Outlier exclusions” in the Setting dialog.



■ Cycle time table - Half



■ It is possible to set the display of “Point”, “Vehicle”, and “Outlier exclusions” in the Setting dialog.

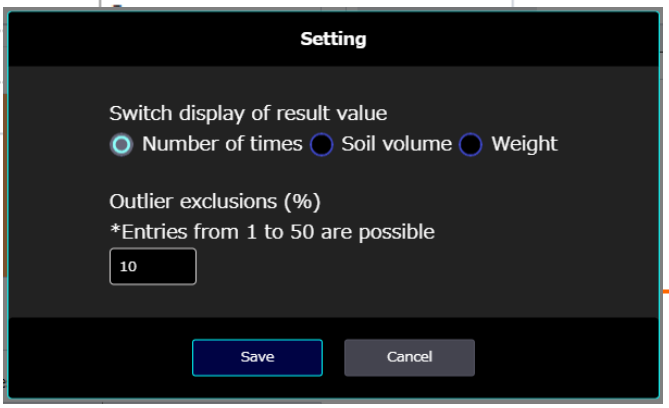


■ 5-11 Daily Report (13/19)

■ Operating status of construction sites- Half

Operating status of construction sites

	04/09/2021	Difference
Loading results	6 Counts	-
Average cycle time	186 min	-
Idling rate	75 %	-
Average loading time	2 min	-
Work time	5.47 h	-

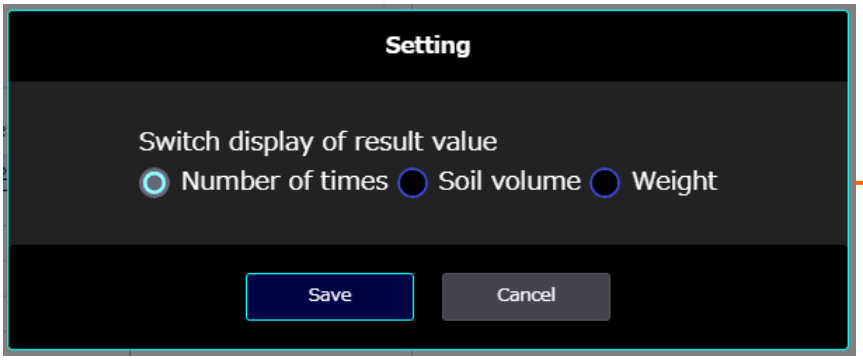


■ It is possible to switch the display of the result value in the Setting dialog.

■ Workload table by vehicle - Half

Workload table by vehicle

	Load	Unload	Total	
	Loading point1	Dumping point1	Load	Unload
BD01	2	0	2	0
BD02	4	1	4	1
Total	6	1	6	1



■ It is possible to switch the display of the result value in the Setting dialog.

■ 5-11 Daily Report (14/19)

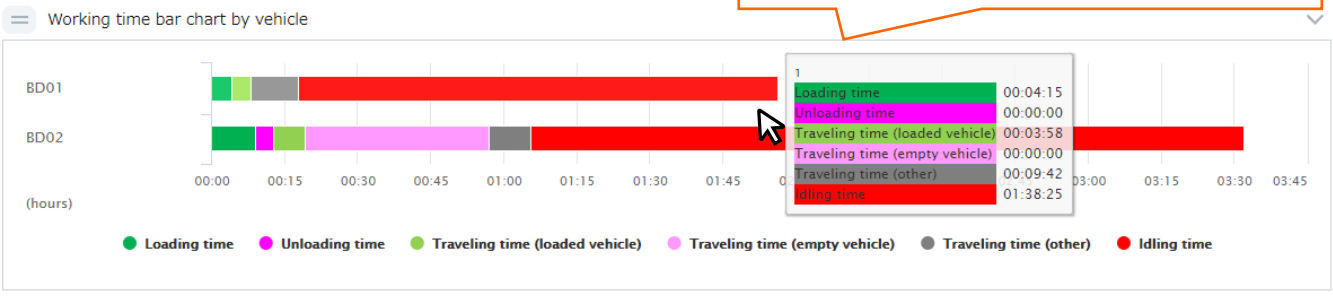
■ Working time table by vehicle - Full

Working time table by vehicle

Vehicle	Loading time	Unloading time	Traveling time (loaded vehicle)	Traveling time (empty vehicle)	Traveling time (other)	Idling time	Total time
BD01	00:04	00:00	00:03	00:00	00:09	01:38	01:54
BD02	00:09	00:03	00:06	00:37	00:08	02:26	03:29
Average	00:07	00:02	00:05	00:19	00:09	02:02	02:44

■ Working time bar chart by vehicle - Full

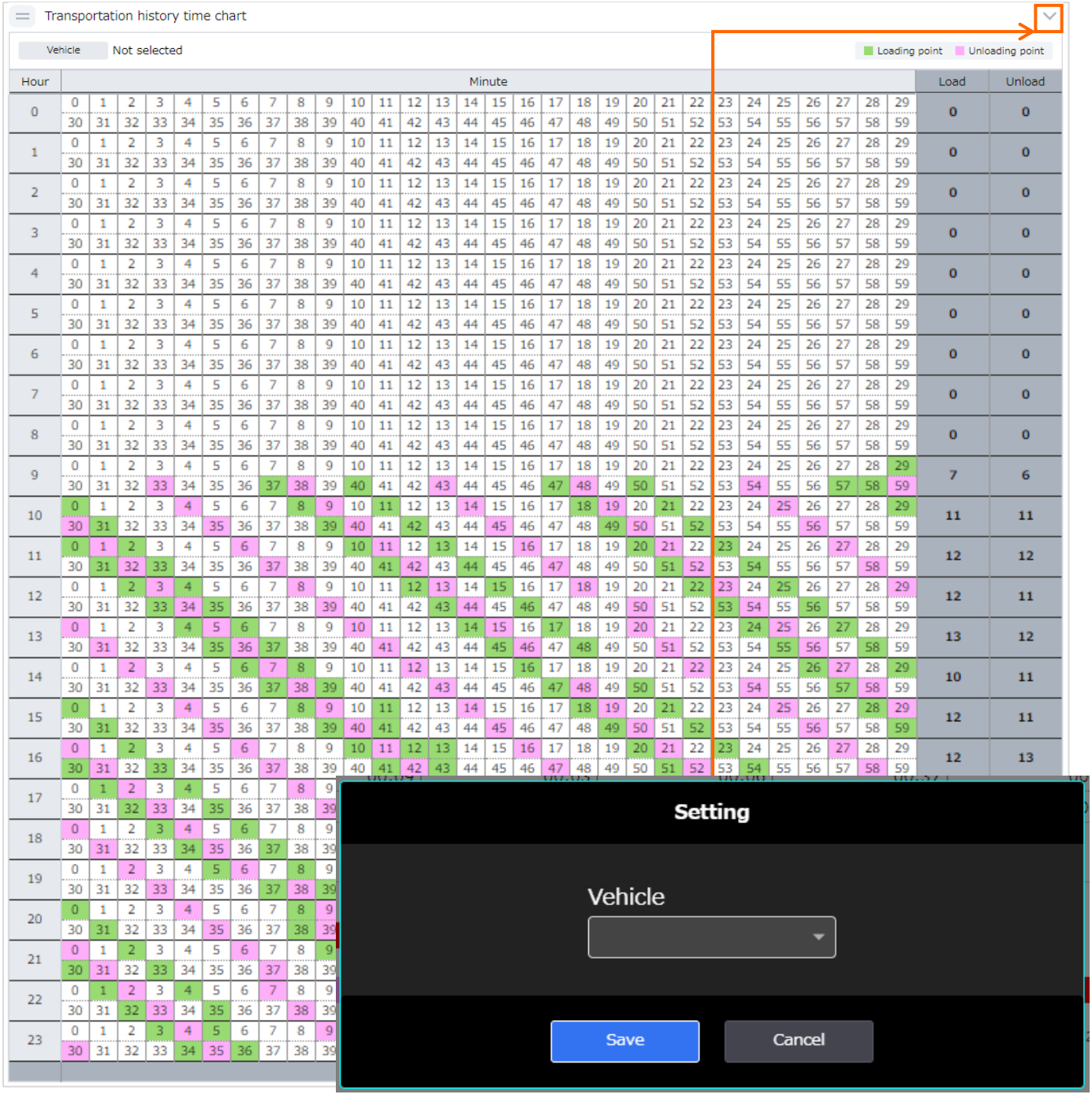
The details of the data can be seen by placing the cursor over the graph.



The horizontal axis of the graph represents the cumulative total time for each of the classified hours rather than the time of day.

■ 5-11 Daily Report (15/19)

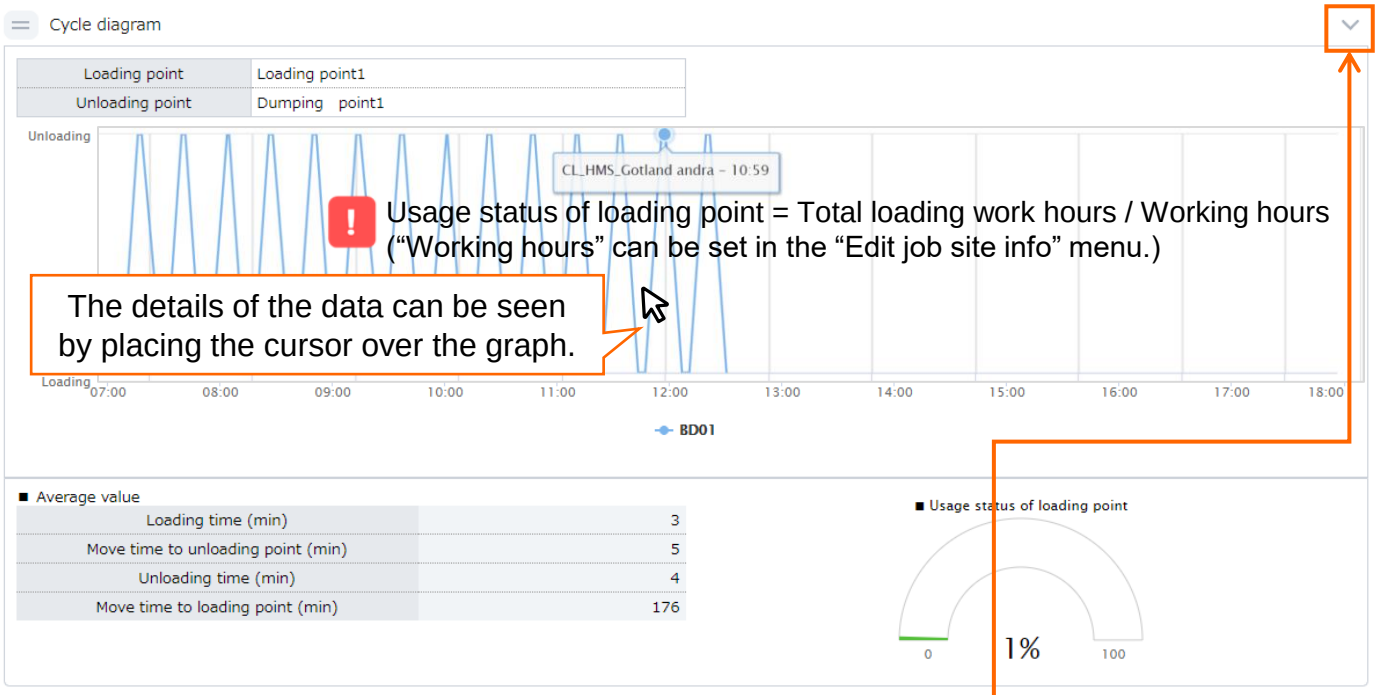
■ Transportation history time chart - Full

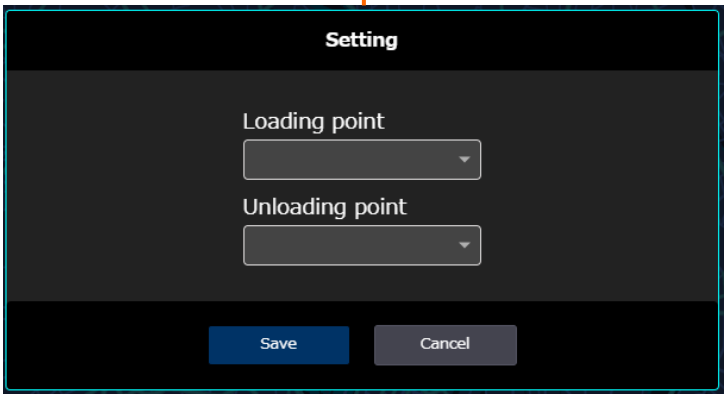


■ By default, it will be the “Vehicle not selected” state. Select a vehicle in the Setting dialog.

■ 5-11 Daily Report (16/19)

■ Cycle diagram - Full

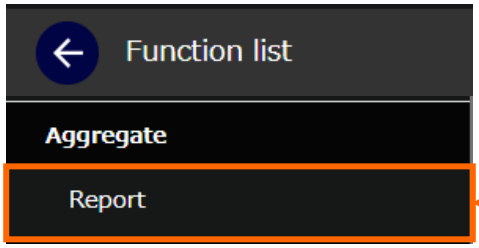




■5-11 Daily Report (17/19)

■ Uploading the image

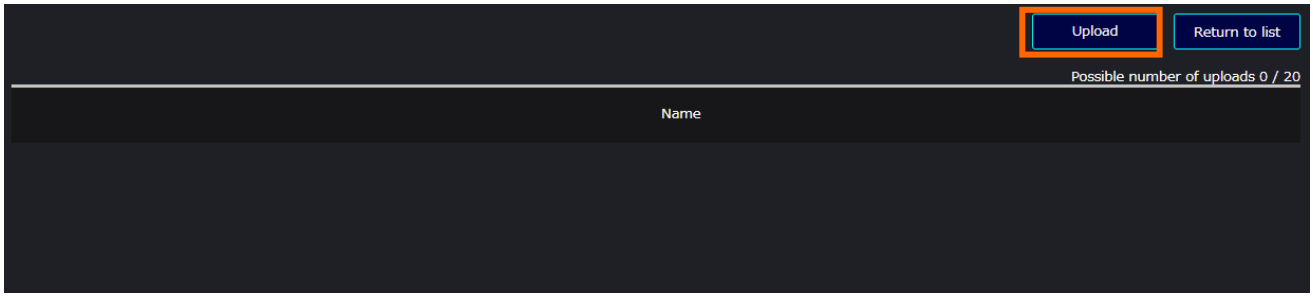
First of all, upload the image from “Image settings”.



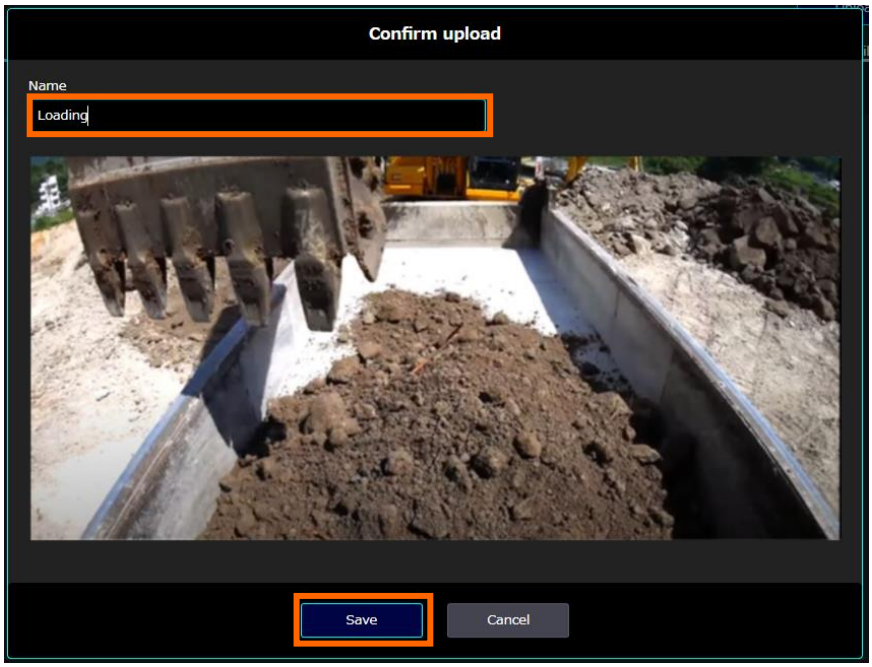
■1 Select “Report” from “Function list”.

■2 On the next page, select Image settings that appears in the upper right.

■3 The image list screen appears. Select “Upload” in the upper right.

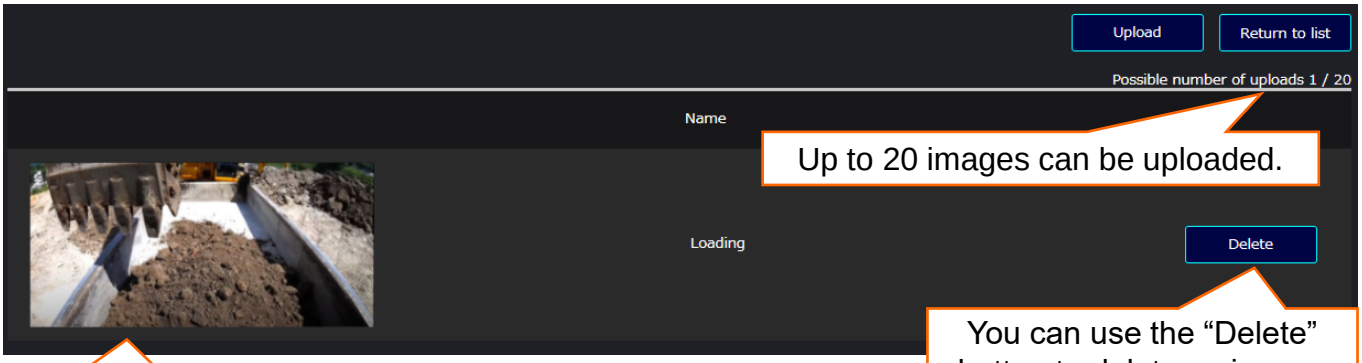


■4 Check the contents on the upload confirmation screen and set the photo name. → “Save”



■ 5-11 Daily Report (18/19)

■ 5 The view returns to the initial image list screen, which lists the image you just uploaded.



Up to 20 images can be uploaded.

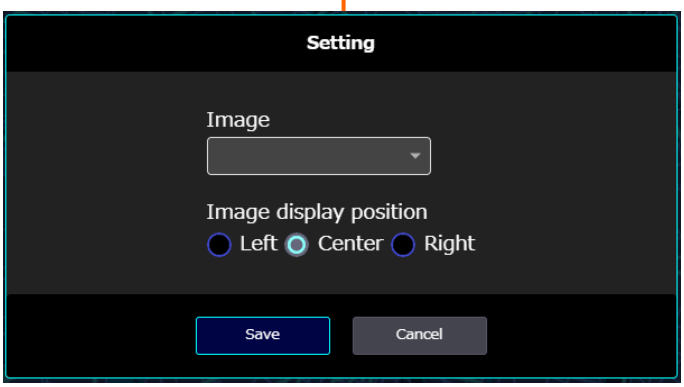
You can use the “Delete” button to delete an image.

Clicking on the image opens a zoomed in image.

After uploading, actually add the module from the report screen.

■ Image - Full

■ By default, the characters “NO IMAGE” are displayed. Select uploaded “Image” and set “Image display position” in the Setting dialog.

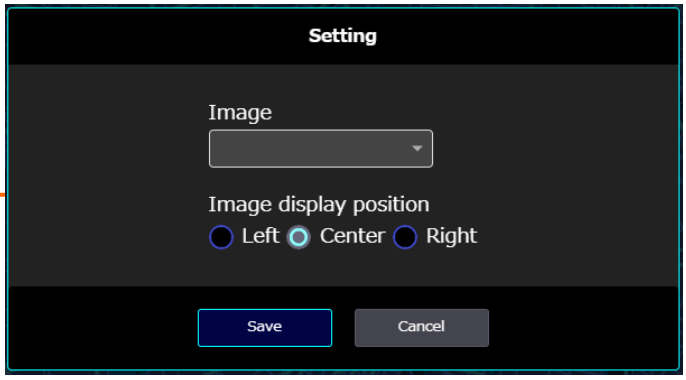


■ Example: The image is inserted at the “center”

■ 5-11 Daily Report (19/19)

■ Image - Half

■ By default, the characters “NO IMAGE” are displayed. Select uploaded “Image” and set “Image display position” in the Setting dialog.



■ Example: The image is inserted at the “center”

SMART CONSTRUCTION Fleet
SMART CONSTRUCTION Fleet Device Mode

06

■ 6-1 Difference between the SMART CONSTRUCTION Fleet Device (SCFD) mode and the mobile application (1/2)

The following shows the comparison table of functions available in SMART CONSTRUCTION Fleet (Full license).

■ Web application

Item	SCFD mode	Mobile app
Sending messages	X	✓

■ Mobile application

Item	SCFD mode	Mobile app
Confirming locations of own machine	X	✓
Confirming locations of other machines	X	✓
Registering vehicles from mobile application	X	✓
Mini map	X	✓
Auto tracking ON/OFF	X	✓
North Up/Heading Up	X	✓
Sending and receiving messages	X	✓
Changing soil properties	X	✓
Assigning construction machines to points	X	✓
Auto count for loading and unloading	✓	✓
Manual count for loading and unloading	X	✓
Viewing work history	X	✓
Approach notification detection target	✓	✓
Approach notifications	X	✓
Alert notifications	X	✓
Switching logged in vehicles	X	✓
Approach alert detection target	✓	✓
Issuing an approach alert	X	✓

■ 6-1 Difference between the SMART CONSTRUCTION Fleet Device (SCFD) mode and the mobile application (2/2)

The following shows the comparison table of functions available in SMART CONSTRUCTION Fleet Lite.

■ Web application

Item	SCFD mode	Mobile app
Sending messages	X	✓

■ Mobile application

Item	SCFD mode	Mobile app
Confirming locations of own machine	X	✓
Confirming locations of other machines	X	✓
Registering vehicles from mobile application	X	✓
Mini map	X	✓
Auto tracking ON/OFF	X	✓
North Up/Heading Up	X	✓
Sending and receiving messages	X	✓
Changing soil properties	X	X
Assigning construction machines to points	X	X
Auto count for loading and unloading	X	X
Manual count for loading and unloading	X	X
Viewing work history	X	X
Approach notifications	X	X
Alert notifications	X	X
Switching logged in vehicles	X	✓
Approach alert detection target	✓	✓
Issuing an approach alert	X	✓

Frequently Asked Questions

07

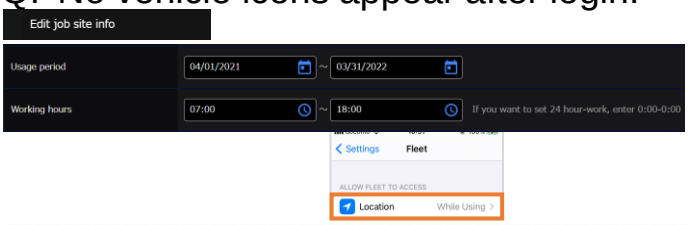
7. Frequently Asked Questions

Q. A message “The ticket is invalid.” appears and you cannot log in.

A. Reinstall the application.

* Record the model, OS, and the screenshot for investigation.

Q. No vehicle icons appear after login.



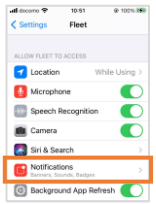
A-1. On the “Edit job site info” screen, check the settings for “Usage period” and “Working hours”.

A-2. Check if “Location Services” of the terminal settings is set to the “ON” position.

Q. The sound cannot be heard.

A. Check to see if the terminal is not in the silent mode.

Q. Failure to receive notifications.



A. Check if “Notifications” of the terminal settings is set to “Allow Notifications”.

Q. The auto count for loading and unloading does not correctly reflect an actual count.

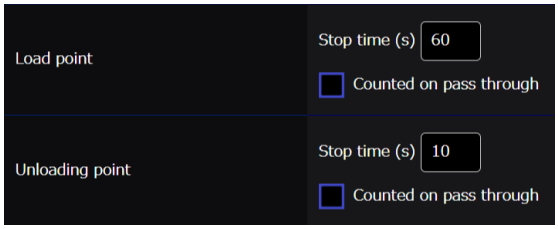
! The accuracy of the auto count result cannot be guaranteed due to an error in the smartphone location information. If you want an accurate count result, select manual count.

Transportation history

A-1.

On the “Transportation history” screen, check to see when a skip or duplicates occurred during the auto count.

Edit job site info



A-2.

On the “Edit job site info” screen, check the settings for the auto count.

Traveling history

A-3.

On the “Travelling history” screen, check if the corresponding vehicle has accurately entered and left the area (including a stop time if it has been set).