Inventory Control (Barcode system)

Proposal for : ADVICS Manufacturing(Thailand)Co.,Ltd.

TOMAS TECH

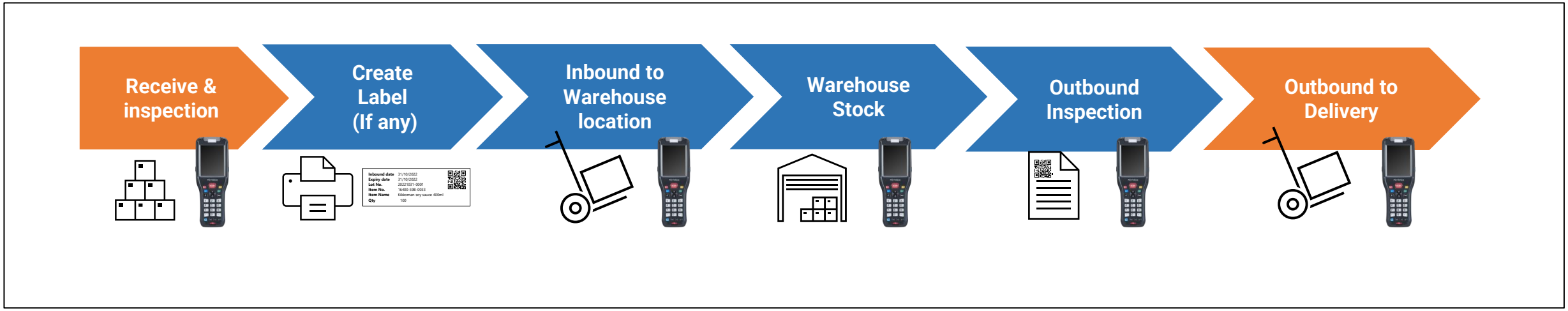
Presentation by TOMAS TECH CO.,LTD.

Proposal summary

We propose an inventory management system. In the current operation, we aim to improve work efficiency and work accuracy by replacing the work managed on paper with a system.

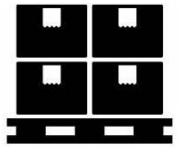
The expected effects of introducing an inventory management system are as follows.

1. By managing warehousing , it can **prevent duplicate orders, out of stock, and excess inventory**.
2. Managing the product location can solve the overflow problem.
3. Work efficiency and work accuracy can be **improved by supporting work at the handy terminal at the time of Inbound and Outbound**.



Benefits overview.

Problem!



Manage Stock failure

Wrong Picking

Wrong inventory And information

Problem of Normal process

- ☒ Don't have Steel sheet & Part vender
- ☒ Stock are not real update to system.
- ☒ Difficult to check at the real stock.
- ☒ Stock are not enough.
- ☒ Over stock.
- ☒ Materials mixed location.
- ☒ Difficult to find product location.
- ☒ Wrong picking products.
- ☒ Data of inventory stock will update to system is too slow and not complete. Because worker still use paper for note , check and record.

Benefits

- ☑ If wrong picking QTY. System will alert before packing.
- ☑ Inventory system will update follow schedule by day , week , and Month.
- ☑ Stock will show real stock to inform to all person.
- ☑ System will inform if some materials are not enough for production.
- ☑ System will give report if have over stock.
- ☑ System able manage the location materials location.
- ☑ When picking process must scan label for confirm item are OK or NG..
- ☑ Don't worry, Packing will be correct before shipping to customer.
- ☑ Remove all paper because we will use WMS system for control inventory. Inbound , Outbound , Stocking,

Use / Reduce

☺ Worker- person

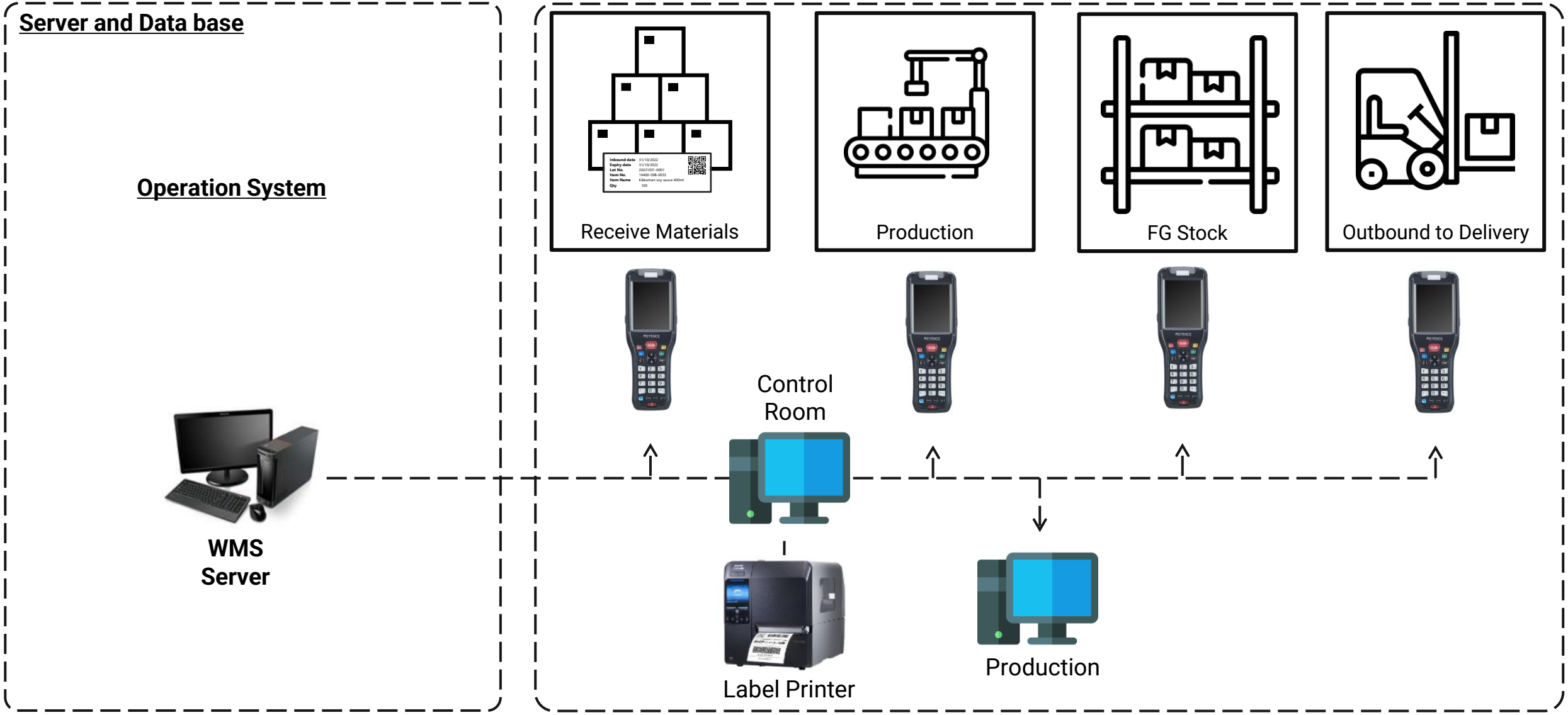
Inbound Materials	: 1 Person
Outbound Materials	: 1-2 Person
Inbound FG	: 1 Person
Outbound FG	: 1-2 Person
Stocking	: 1-2 Person

🕐 Time reduce by estimate. Every process compare with manual process.

Speed time reduce 30-50% by estimate.

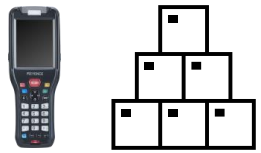
But can be protect human error 90%

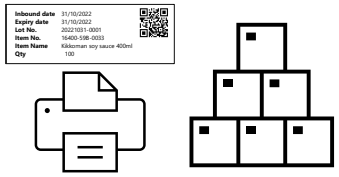
Suggestion | System Outline



Suggestion | Inbound Detail

Receive Materials & inspection → **Create Label** → **Inbound to Materials location** → **Inventory Update**





If don't have label

1

Inbound-Inspection operation (If Any)

Import Delivery Note/ Invoice inbound schedule CSV. information list to the system. it will be able to check the list of arrival schedule information on the handy terminal.

2

Inbound-Labeling operation (If Any)

Select a schedule from the handy terminal. Print labels from the label printer based on the selected schedule information. Create labels based on information .

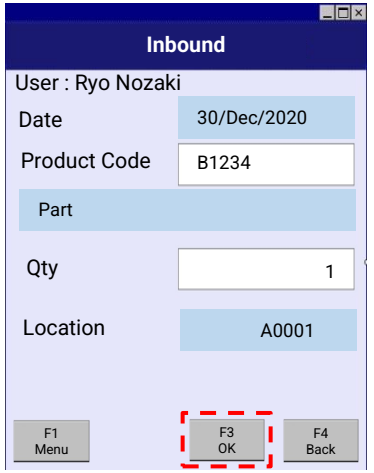
*If data such as expiration date, lot number, etc. are not linked, it is possible to manually enter them manually.

Inbound date	31/10/2022
Expiry date	31/10/2022
Lot No.	20221031-0001
Item No.	16400-59B-0033
Item Name	Kikkoman soy sauce 400ml
Qty	100

3

Inbound-Store operation

Scan the label with a handy terminal. Location information corresponding to the scanned label item is displayed. Go to where the location information is displayed.



4

Inbound-Store complete operation

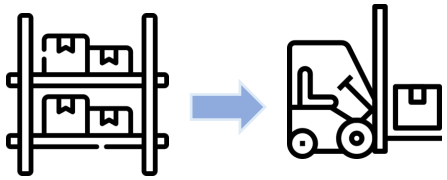
Scan the loading location with a handy terminal. The system checks if the location instructions are followed. If wrong, display will show **"NG"**.

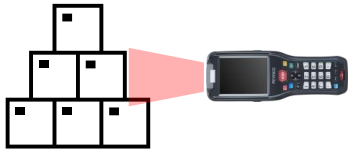
If they match, the goods have been received. Warehousing data is linked to the ERP side.(* If any) or record by manual

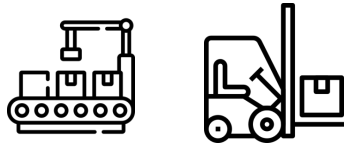
Location QR code

Suggestion | Outbound Detail

Out from Materials or FG Stock → **Outbound Inspection** → **Production Line or Delivery**



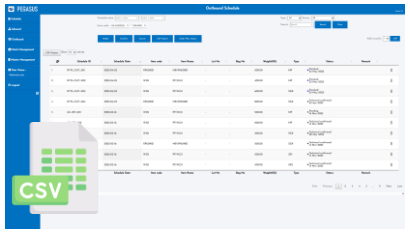




1

Create Picking list , Delivery plan or Production Plan information (Import or create)

1. Part Supply department create (Picking list)
2. Import picking list CSV file to WMS system.
3. Or create in Schedule program.



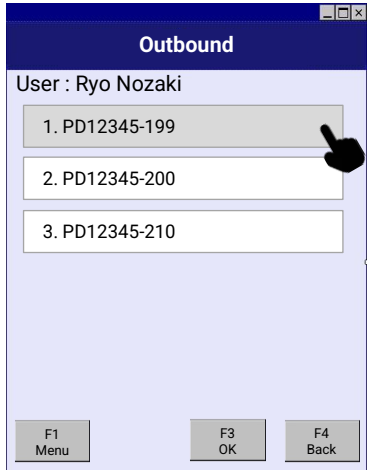
4. The picking list was linked from WMS to handy terminal and then start picking materials follow item displayed on handheld.

2

Outbound schedule list.

When system get requested information Picking list already.

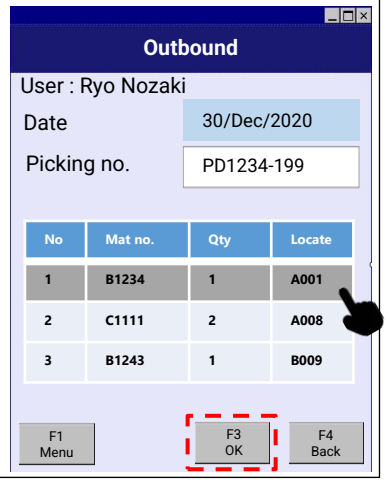
1.Select one of picking list for start picking.



3

Outbound schedule list.

1.Select Item or scan first item that received.



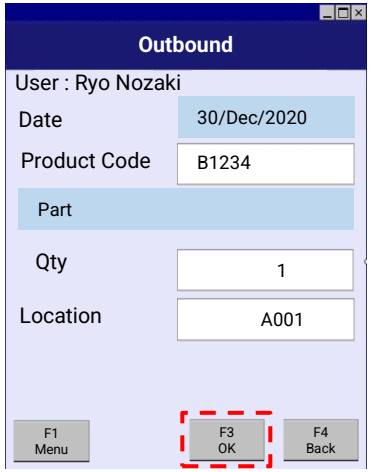
4

Outbound scans

1.Start scan label and in put Qty , reconfirm location. then confirm.

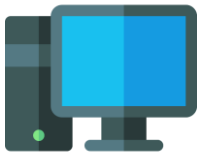
2. System will choose **LOT** by FIFO when every outbound process.

3. After confirm system will reduce QTY stock.



Screen image | Sample dashboard Monitor

Control Room



Production Line

PEGASUS

Dashboard

Version 1.0

- Schedule
- Inbound
- Outbound
- Stock Management
- Master Management
- User Name : Administrator
- Logout

Total Stock Status

QI	79,281.70
UR	247,710.13
NP	23,454.10
TEST	15,568.60
Block	1,301.40
Total	367,315.93

Mini Pellet

QI	30,084.00
UR	124,331.00
NP	7,350.00
TEST	4,526.00
Block	230.00
Total	166,521.00

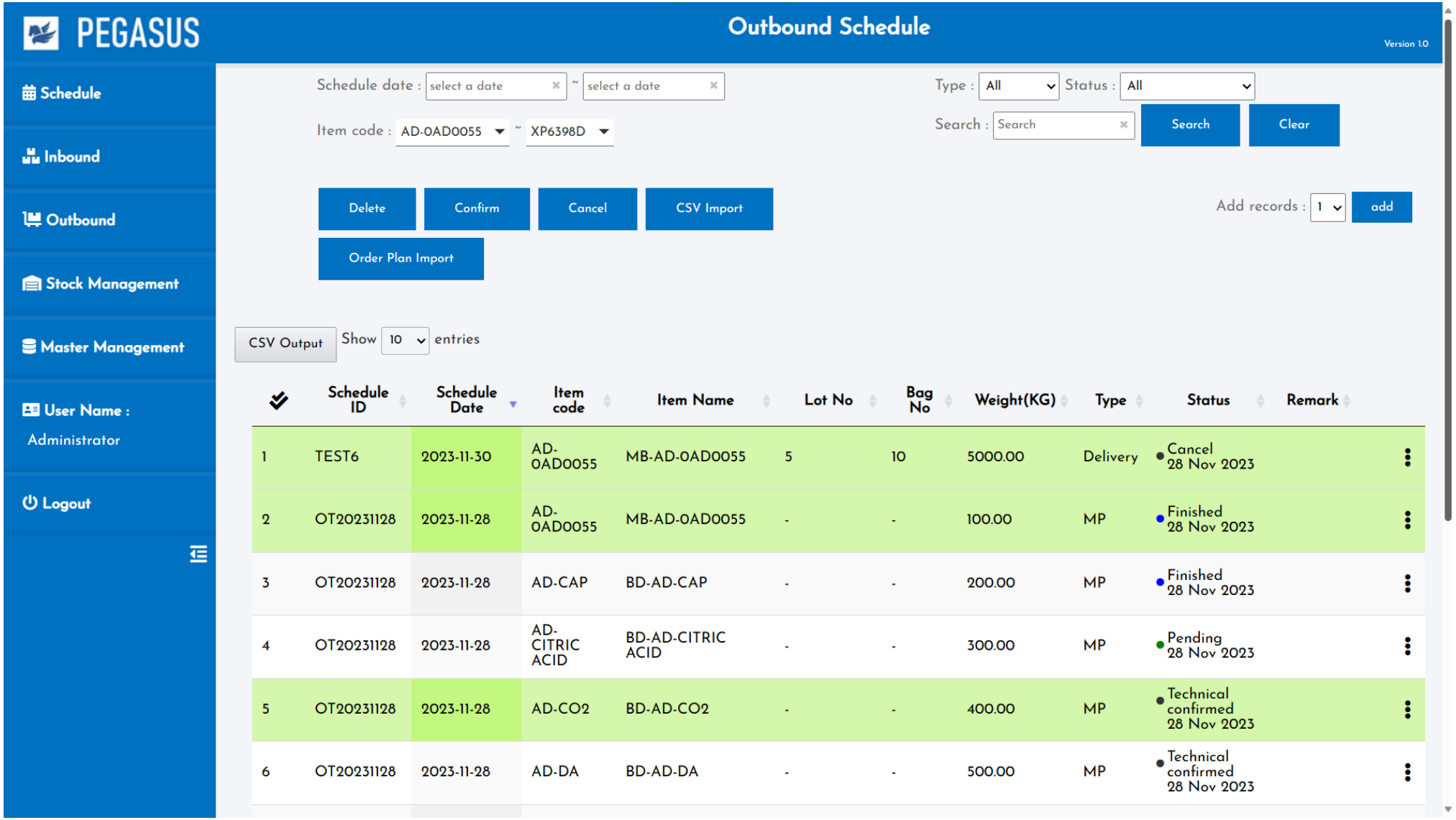
SGX

QI	35,410.80
UR	89,052.53
NP	12,262.50
TEST	6,860.90
Block	966.40
Total	144,553.13

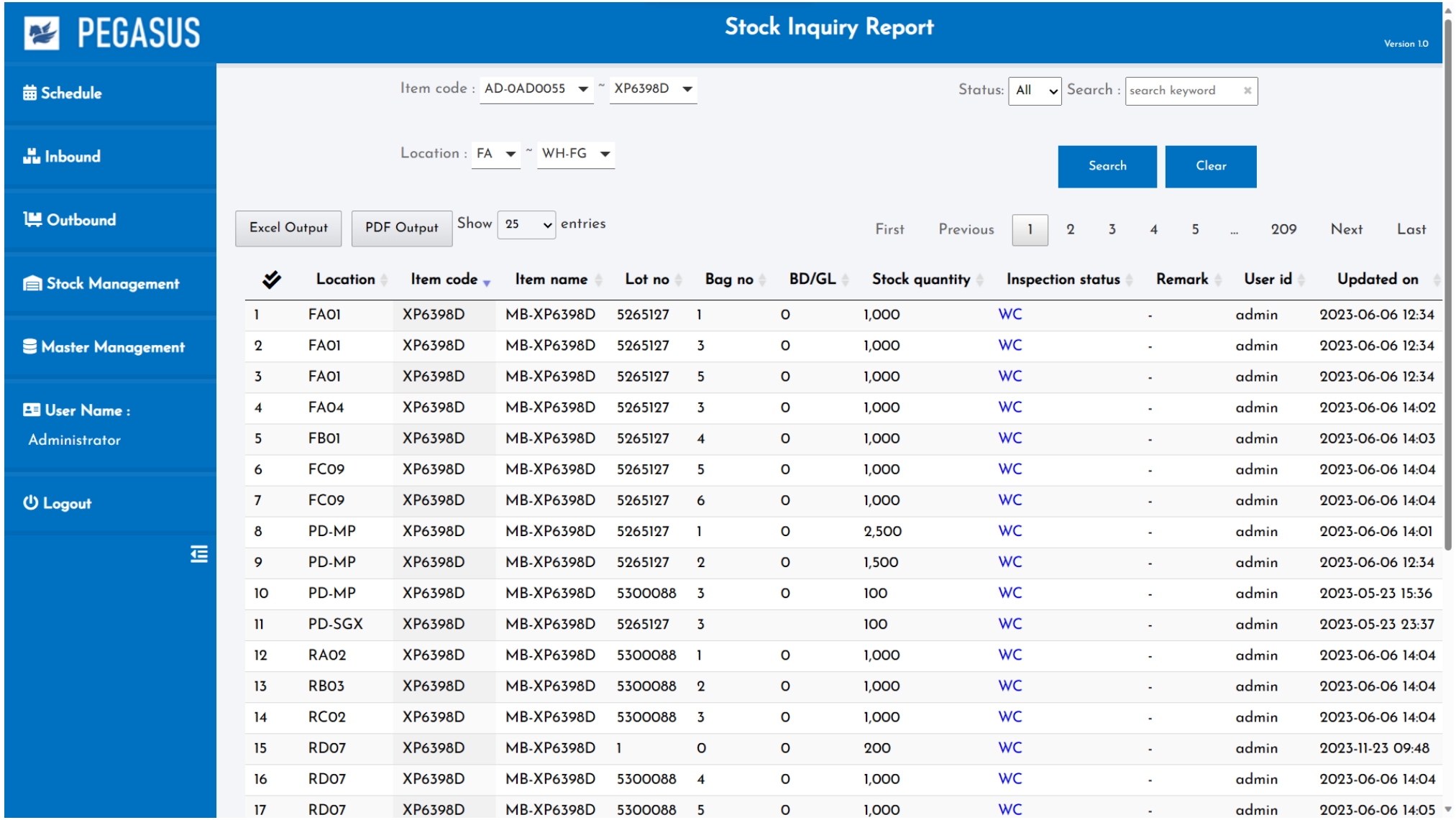
SX

QI	13,786.90
UR	34,326.60
NP	3,841.60
TEST	4,181.70
Block	105.00
Total	56,241.80

Screen image | Sample Outbound and Delivery Status



Screen image | Sample Total FG , Total Production

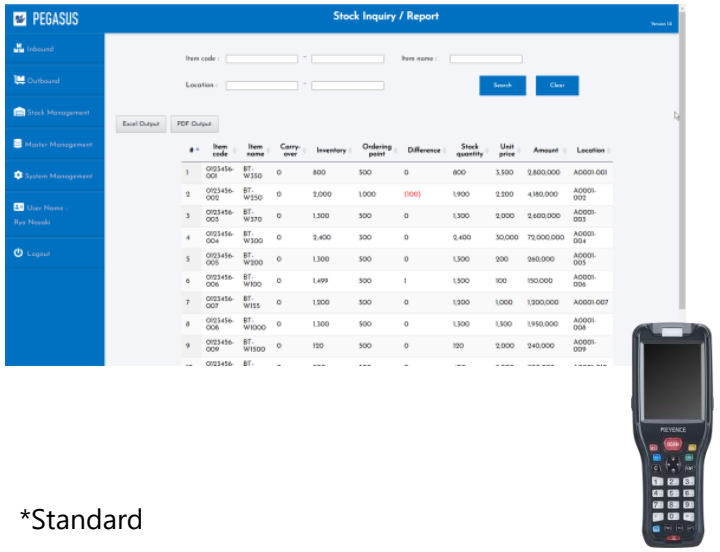


	Location	Item code	Item name	Lot no	Bag no	BD/GL	Stock quantity	Inspection status	Remark	User id	Updated on
1	FA01	XP6398D	MB-XP6398D	5265127	1	0	1,000	WC	-	admin	2023-06-06 12:34
2	FA01	XP6398D	MB-XP6398D	5265127	3	0	1,000	WC	-	admin	2023-06-06 12:34
3	FA01	XP6398D	MB-XP6398D	5265127	5	0	1,000	WC	-	admin	2023-06-06 12:34
4	FA04	XP6398D	MB-XP6398D	5265127	3	0	1,000	WC	-	admin	2023-06-06 14:02
5	FB01	XP6398D	MB-XP6398D	5265127	4	0	1,000	WC	-	admin	2023-06-06 14:03
6	FC09	XP6398D	MB-XP6398D	5265127	5	0	1,000	WC	-	admin	2023-06-06 14:04
7	FC09	XP6398D	MB-XP6398D	5265127	6	0	1,000	WC	-	admin	2023-06-06 14:04
8	PD-MP	XP6398D	MB-XP6398D	5265127	1	0	2,500	WC	-	admin	2023-06-06 14:01
9	PD-MP	XP6398D	MB-XP6398D	5265127	2	0	1,500	WC	-	admin	2023-06-06 12:34
10	PD-MP	XP6398D	MB-XP6398D	5300088	3	0	100	WC	-	admin	2023-05-23 15:36
11	PD-SGX	XP6398D	MB-XP6398D	5265127	3		100	WC	-	admin	2023-05-23 23:37
12	RA02	XP6398D	MB-XP6398D	5300088	1	0	1,000	WC	-	admin	2023-06-06 14:04
13	RB03	XP6398D	MB-XP6398D	5300088	2	0	1,000	WC	-	admin	2023-06-06 14:04
14	RC02	XP6398D	MB-XP6398D	5300088	3	0	1,000	WC	-	admin	2023-06-06 14:04
15	RD07	XP6398D	MB-XP6398D	1	0	0	200	WC	-	admin	2023-11-23 09:48
16	RD07	XP6398D	MB-XP6398D	5300088	4	0	1,000	WC	-	admin	2023-06-06 14:04
17	RD07	XP6398D	MB-XP6398D	5300088	5	0	1,000	WC	-	admin	2023-06-06 14:05

Suggestion | Store - Stock management

Stock inquiry

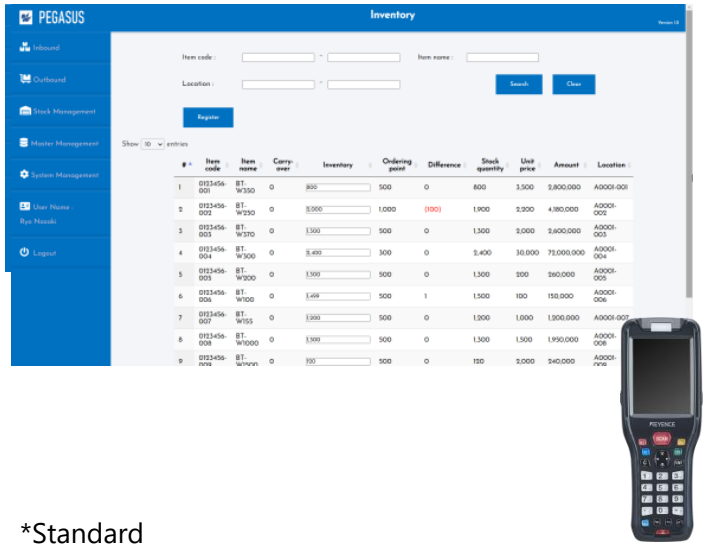
It can refer to the current inventory information in real time. (PC/HT)



*Standard

Stocktaking

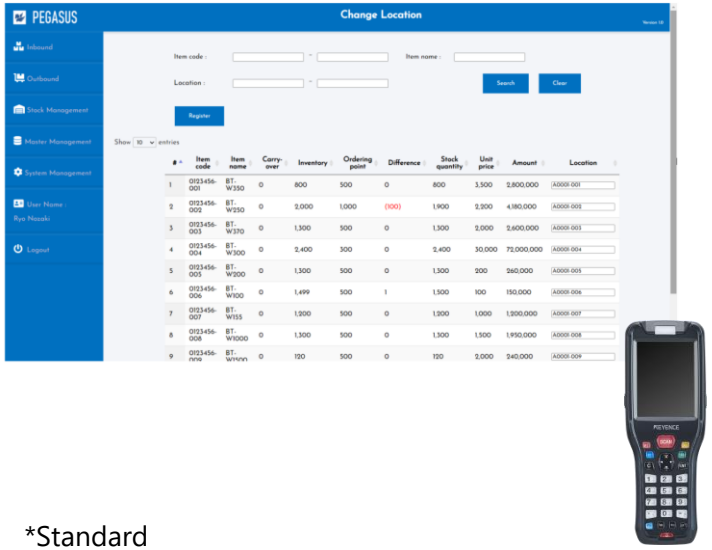
Check the quantity in stock on a regular basic. Compare the theoretical inventory quantity with the actual quantity. (PC/HT)



*Standard

Change / Check Location

Check Location of spare part by use Handheld or Computer , System able show location of spart that looking.

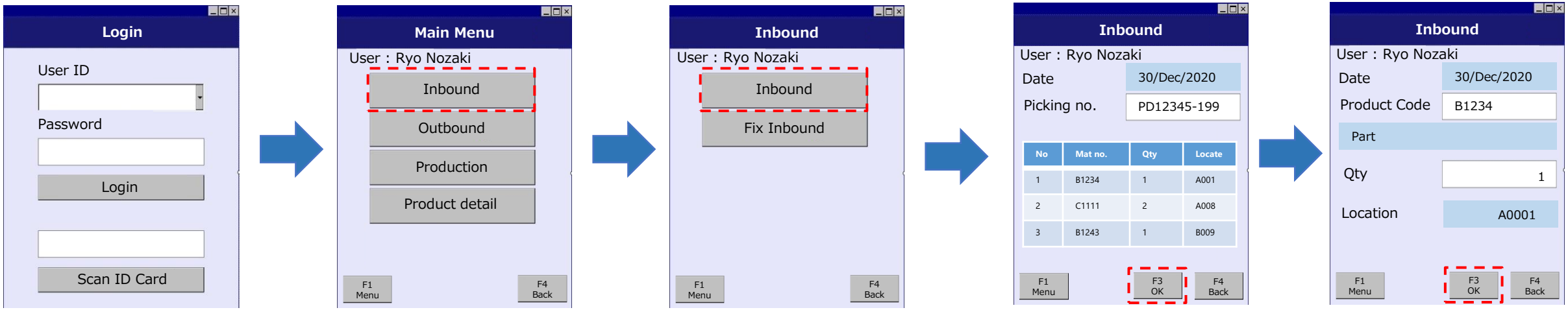


*Standard

Screen image | Inbound & Outbound of Handy Terminal

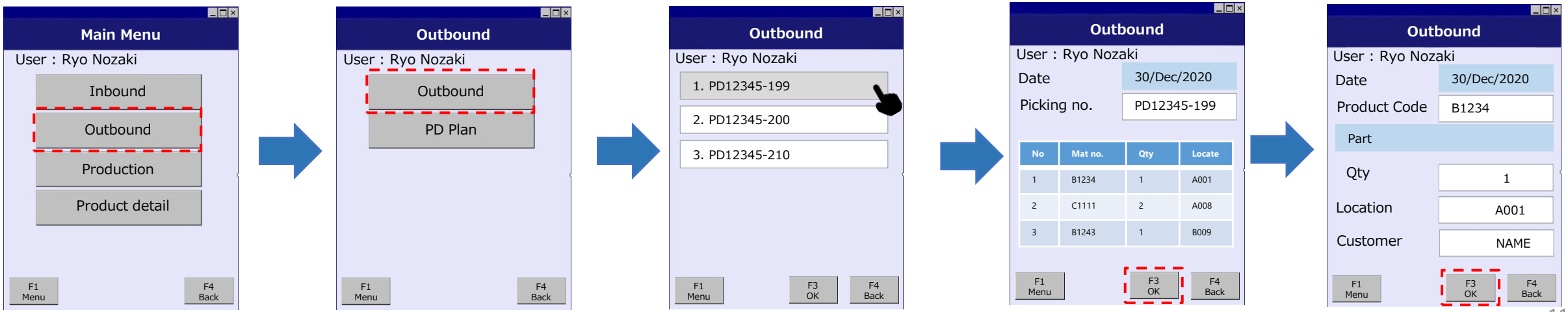
Inbound

*Standard



Outbound

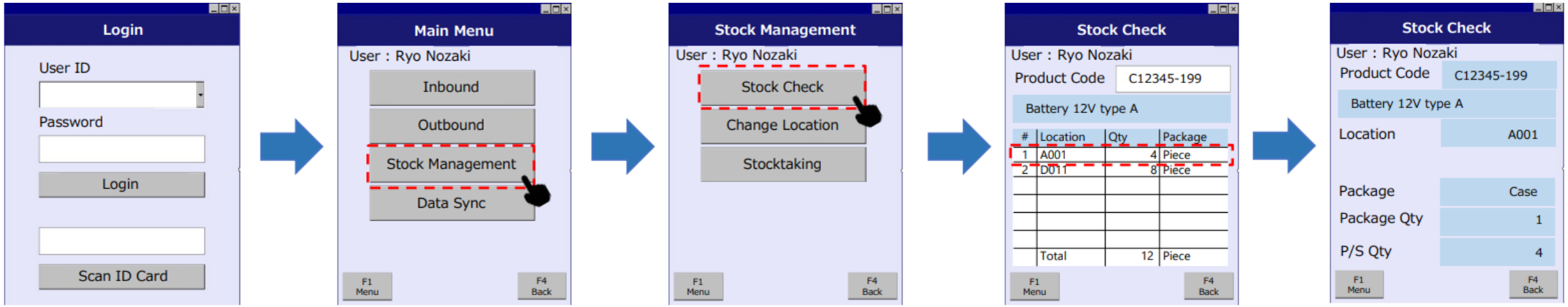
*Customize



Screen image | Stock Management / Change location

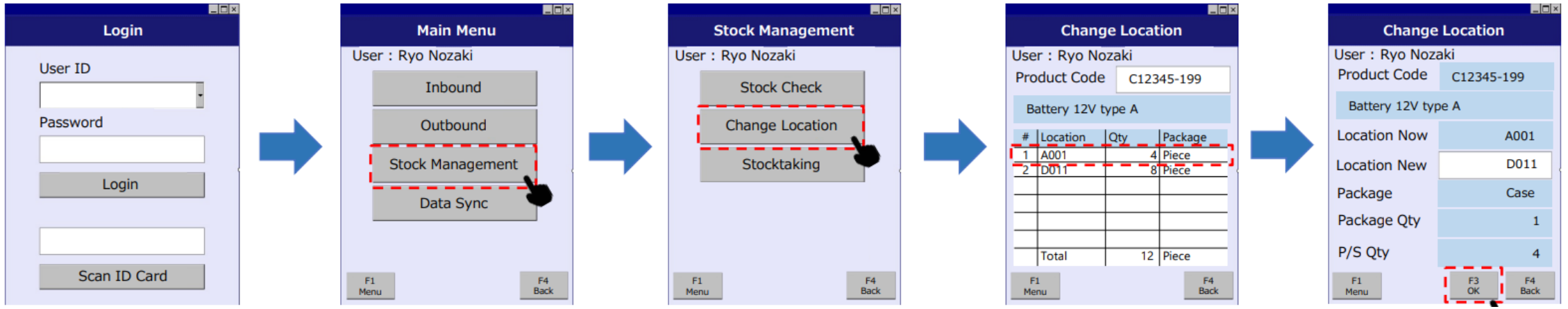
Stock Check

*Standard

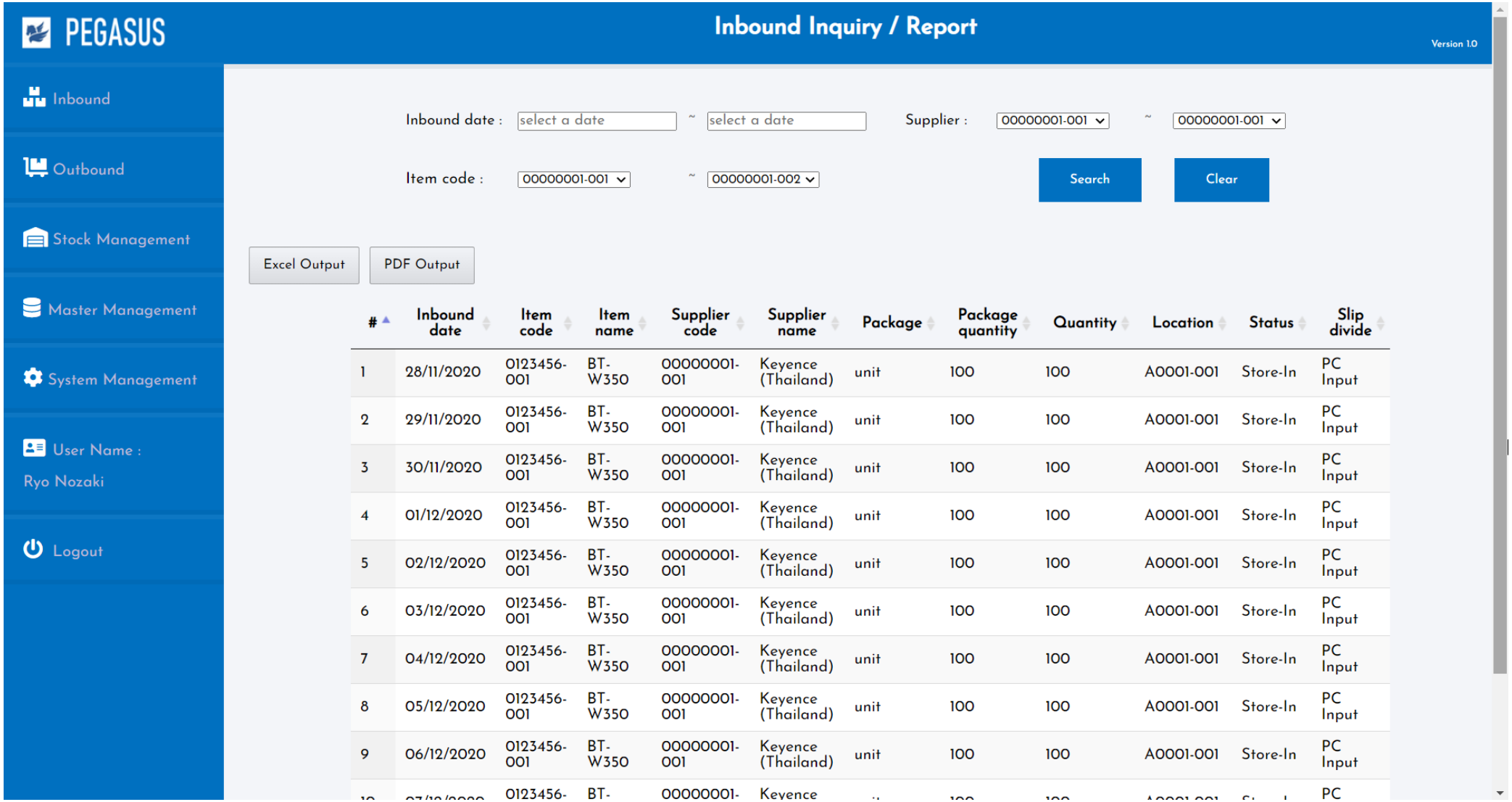


Check /Change Location

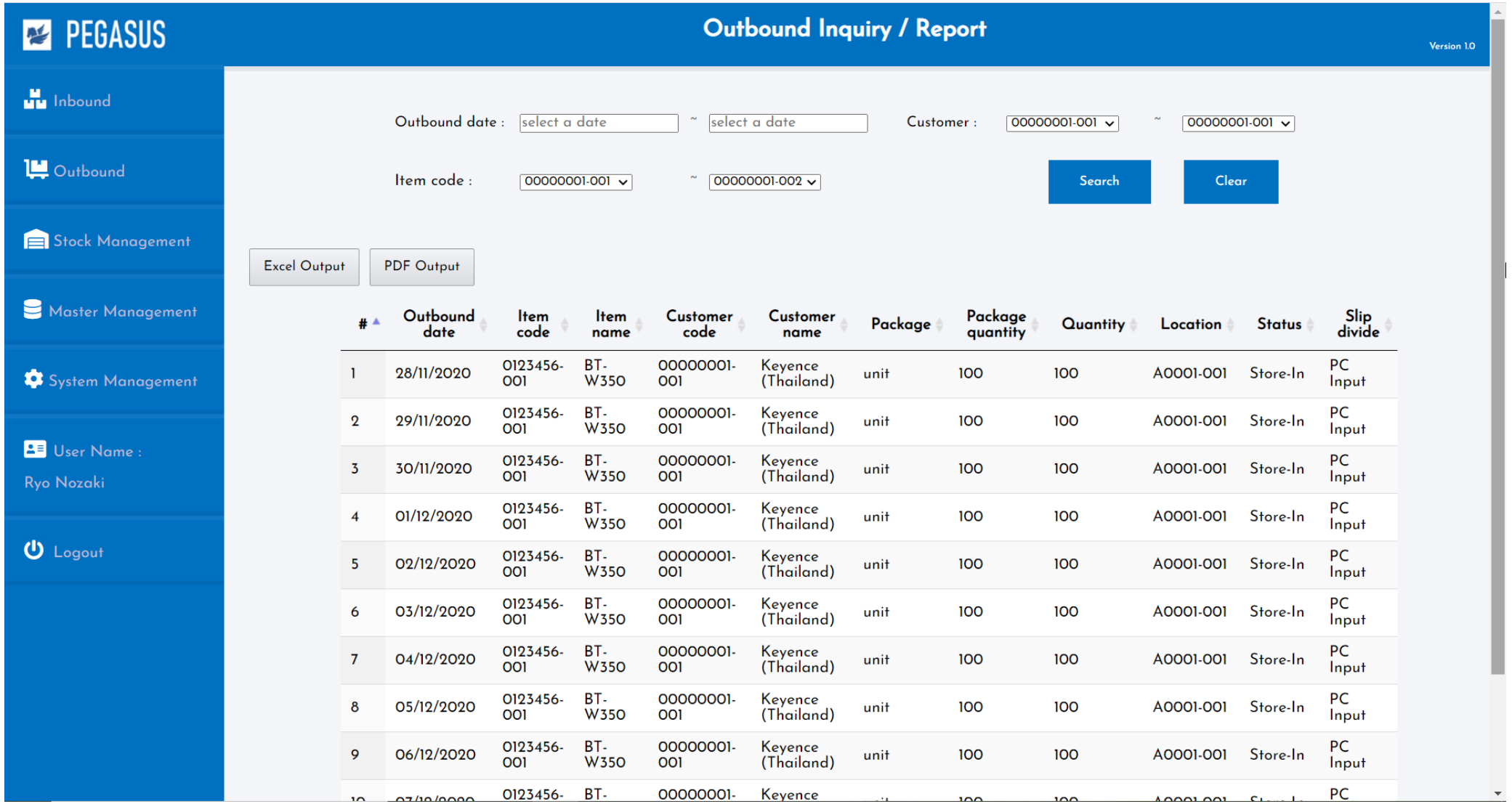
*Standard



Screen image | Inbound Inquiry / Report



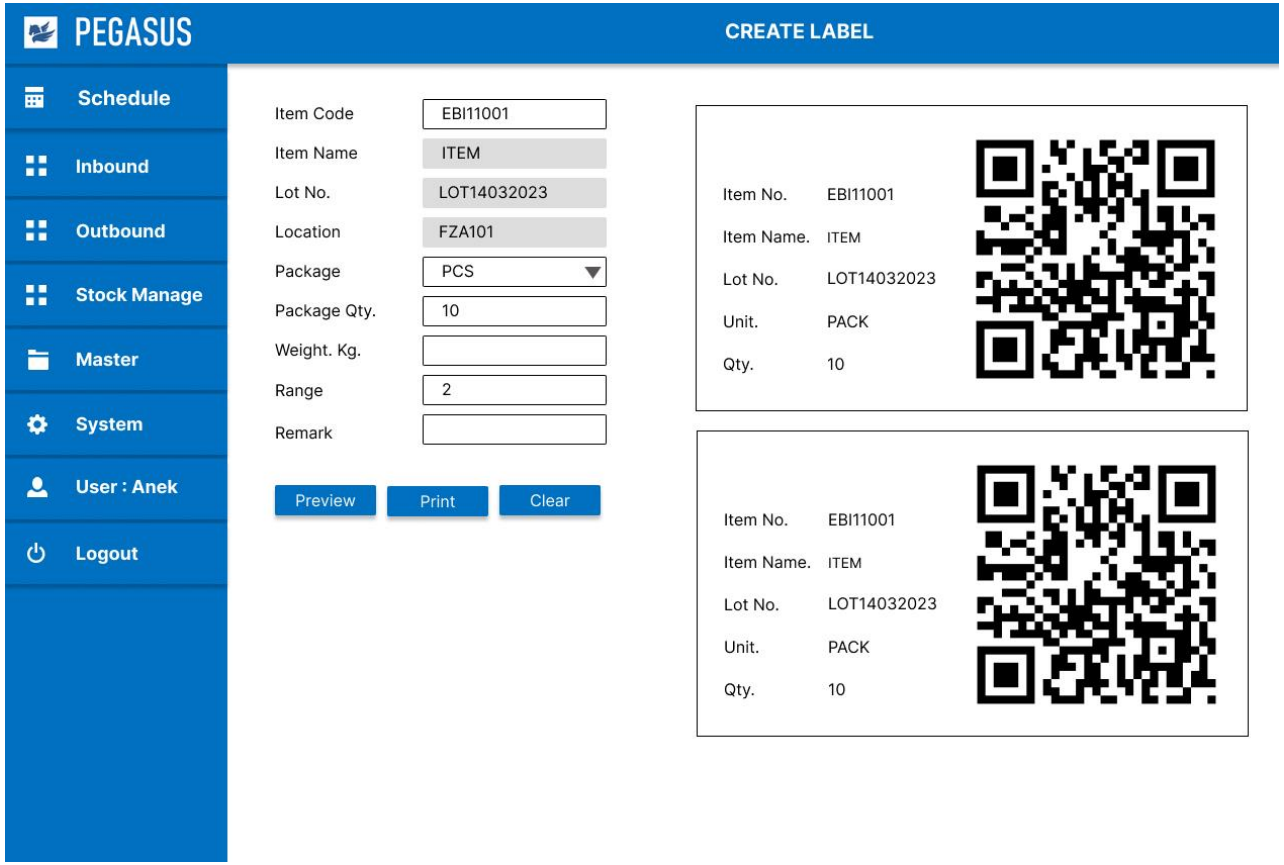
Screen image | Outbound Inquiry / Report



#	Outbound date	Item code	Item name	Customer code	Customer name	Package	Package quantity	Quantity	Location	Status	Slip divide
1	28/11/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
2	29/11/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
3	30/11/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
4	01/12/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
5	02/12/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
6	03/12/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
7	04/12/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
8	05/12/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
9	06/12/2020	0123456-001	BT-W350	00000001-001	Keyence (Thailand)	unit	100	100	A0001-001	Store-In	PC Input
10	07/12/2020	0123456-	BT-	00000001-	Keyence	unit	100	100	A0001-001	Store-In	PC

Screen image | Label Generate

Item Label

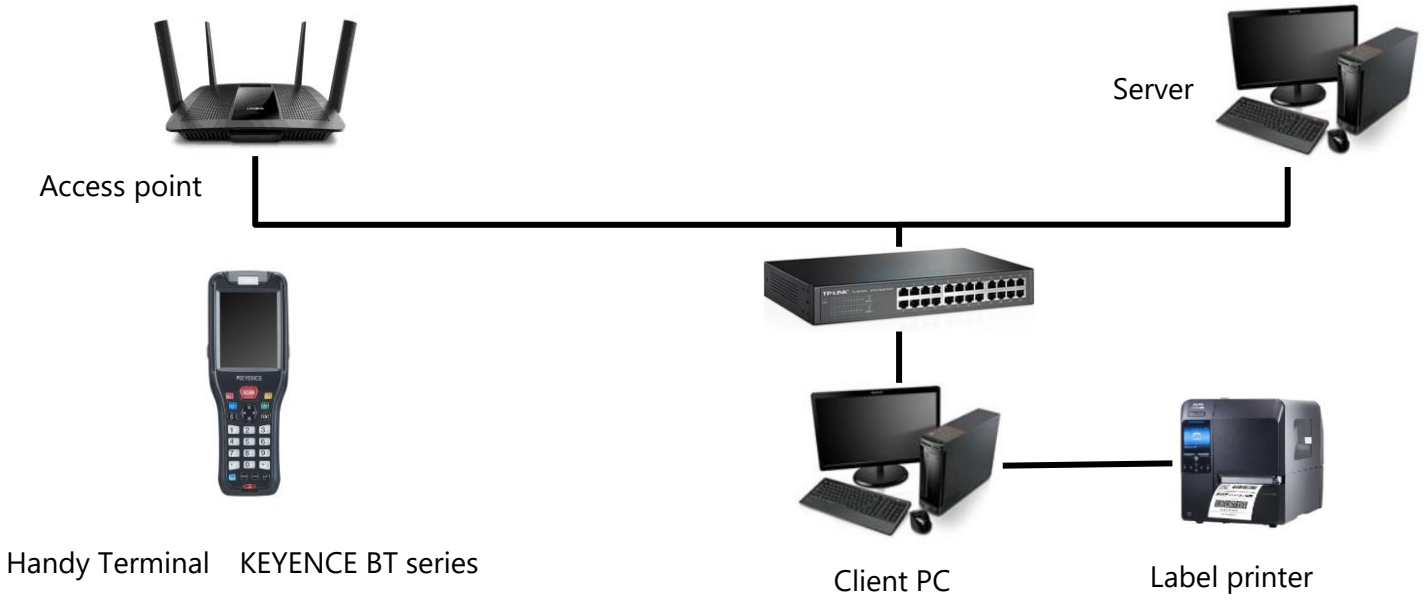


Location Label

Entity (Location)
: STB
Keep Location
: Cab11-2

Entity (Location)
: STB
Keep Location
: Cab11-3

System configuration



#	Item	Recommended specifications and models
1	Cloud Server	OS: Windows Server 2016R2 Standard / Memory: 8GB or more / Hard disk: Free space 50GB or more / Display: Resolution 1366 x 768 or more
2	Client PC	OS: Windows 7 / 8.1 / 10 / Memory: 4GB or more / Display: Resolution 1366 x 768 or more Browser: Google Chrome (latest version) * PC machine with recommended model specifications or higher
3	Handy terminal	KEYENCE BT series (Windows OS type)
4	Access point	IEEE802.11a/b/g/n
5	Label Printer	*Bluetooth compatible model/Material: Art Permanent/Size: 50 x 100 mm

System maintenance

#	Software maintenance		Standard / Option
1	Operation support / recovery support	We will open a support window and provide operational support by phone and email, and recovery support in the event of a software failure.	Standard*1
2	Upgraded software provided	We will provide an upgraded version when the software functions are improved. We provide the latest software compatible with the latest OS free of charge. It can reduce your life cycle cost by eliminating the need to purchase software when updating the server.	Standard*1
#	**Software re-setup**		
1	Software re-setup	If it need to re-set up the software after repairing a server failure Perform restoration work. (Repair of inventory data is not included in software re-setup)	Standard*1

* 1) Service is provided at the system purchase fee in the first year of the contract. Contract on a yearly basis from the second year onwards
* 2) Service provided only when hardware is purchased from us

Schedule | Go live schedule

1. Current situation analysis	We will inspection the current business and the system being used, confirm the requirements, and analyze the customer's current situation. And will make an estimate based on customer requirements.	**Within sales**
2. Requirement definition	Detailed requirement definition will be performed based on the analysis result. Check the detailed requirements so that the system can be implemented in a manner that matches actual operation.	**1-4 weeks**
3. Design	While a process meeting, we will perform basic design, detailed design, and preparation for transfer based on the requirements.	**1-3 weeks**
4. Development / Test	Perform the test that fits with customer work and start the test. We will consider a transfer every method for let smooth working process.	**1-20 weeks**
5. Introduction support	We will have an operation training to introduce the system that is currently being used or work in parallel with the work, and after confirming the usability, etc., And the final acceptance will be continue to process.	**1 week**
6. Production operation	When start operation. We will provide a long-term support for safe and comfortable system by providing operation maintenance support, information provision, and revision edition.	**Min : 4 weeks** **Max : 28 weeks**

Appendix | Handy terminal

Specifications

Item			Specifications
Model			BT-A500/A500GC/A500GM/A500GA/A500GE
Controller	CPU		Qualcomm Octa-core
	OS		Android 10
Main memory	RAM		2 GB
	ROM		16GB
Display	LCD	Display method	3.5-inch TFT color LCD
		Resolution (number of dots)	320 (H) x 480 (V)
	Operation confirmation LED		3-color LED (red, green, blue, yellow, cyan, magenta, white)
Operations	Hard keys	Type	Set of arrow keys x 1 (4 directions), trigger keys x 3 (center x 1, side x 2), customized keys x 2 (P1 key, P2 key), function change keys x 4 (white key, orange key, blue key, SFT key), data input keys x 14 (0 to 9 keys, ENT key, clear key, symbol key, minus key), power key x 1
	Touch panel		Electrostatic capacitance method (Dragontrail tempered glass)
Scanner	Optical characteristic	Reading light source	High-intensity white LED
		Pointer light source	Visible light semiconductor laser (658 nm) Output 1.0 mW Class 2 laser product (IEC 60825-1)
		Minimum resolution	2D code: 0.169mm Barcode: 0.076mm
		Reading distance	65-450mm (CODE39 narrow bar width 0.254mm) 100-745mm (CODE39 narrow bar width 0.508mm) 45-295mm (QR cell size 0.254mm) 25-440mm (QR cell size 0.508mm)*2
		Reading width/ Field range	178 x 107mm (Reading distance 200mm)*2
	Supported codes		JAN/EAN/UPC (add-on code supported), CODE128, GS1-128, CODE39, NW-7, CODE93, ITF COOP2of5, Industrial 2of5 QR code, Micro QR, DataMatrix (ECC200), PDF417, GS1 DataBar, composite symbol, Postal
Wireless communication	Wireless LAN	Wireless standards	IEEE802.11a/b/g/n/ac
		Radio frequency	BT-A500: 2.4GHz (b, g, n:1 to 13ch) 5.2GHz, 5.3GHz, 5.6GHz (a/n/ac) BT-A500GC: 2.4GHz (b, g, n:1 to 13ch) 5.2GHz, 5.3GHz, 5.8GHz (a/n/ac) BT-A500GM/A500GE: 2.4GHz (b, g, n:1 to 13ch) 5.2GHz, 5.3GHz, 5.6GHz, 5.8GHz (a/n/ac) BT-A500GA: 2.4GHz (b, g, n: 1 to 11ch) 5.2GHz, 5.3GHz, 5.6GHz, 5.8GHz (a/n/ac)
		Security method	Security: OPEN / WEP(64/128 bit)/ WPA/WPA2 WPA encryption: TKIP/ AES Authentication: PSK/ PEAP/ EAP-TLS/ EAP-TTLS/ EAP-PWD
	Bluetooth®	Wireless standards	Bluetooth® V4.2 + BR/EDR/LE
		Supported profiles	A2DP, AVRCP, HID, IOPT, OPP, PAN, SPP
		Communication distance	Approx. 10 m

Item			Specifications
Power supply	Main battery	Type	Dedicated lithium ion battery pack
		Capacity	3250 mAh
		Charging time	Approx. 5.5 hours (ambient temperature)
	Backup battery	RAM data	Electric double layer capacitor 3 minutes*1*2
Others	Audio		Speaker, Microphone
	Vibration		Available
	Camera		13MP, autofocus
	Sensor		Accelerometer, Ambient Light, Gyroscope
	USB		USB Type-C port
Environmental resistance	Enclosure rating		IP65
	Drop resistance (from a height)		Onto concrete from a height of 2.0 m Up to 20,000 impacts from a height of 30 cm*2
	Ambient operating temperature		-20 to +50°C When charging 0 to +40°C (no freezing)*3
	Ambient operating humidity		20 to 85% RH (no condensation)
	Ambient storage temperature		-20 to +60°C (no freezing)
	Ambient storage humidity		20 to 85% RH (no condensation)
Dimensions			204 x 73.2 x 40.5 (30.0) mm The value in parenthesis is the grip dimension.
Weight			Approx. 265 g (with battery pack)

*1 When the main battery is not attached or has no remaining charge.
*2 This is a test value, and the value is not guaranteed.
*3 Continuous usage time may be shortened significantly in a subfreezing environment due to a load. Be sure to conduct a test before use.

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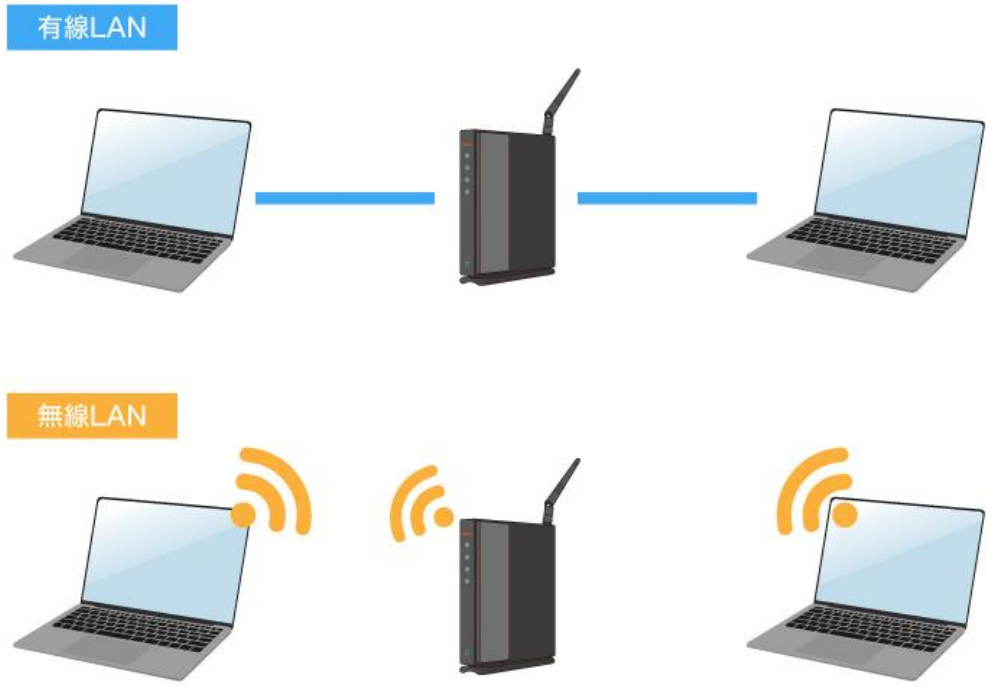
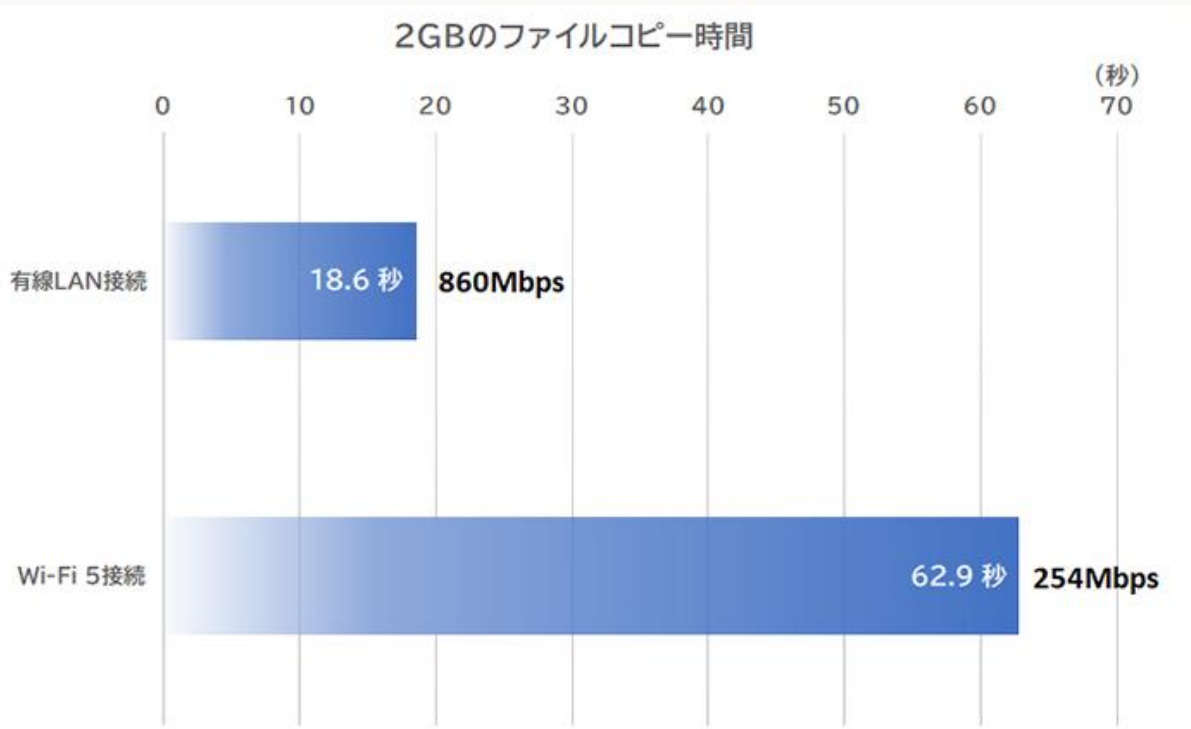
Appendix｜Communication speed between WIFI and LAN

In the case of priority LAN, the average communication speed is 860 Mbps.
In the case of WIFI, the average communication speed is 250 Mbps.
When transferring 2GB of data, it takes 18.6 seconds for LAN and 62.9 seconds for WIFI.
WIFI is also affected by communication efficiency, so obstacles can slow it down even further.





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