

Terminal Reservation System Using CONPAS

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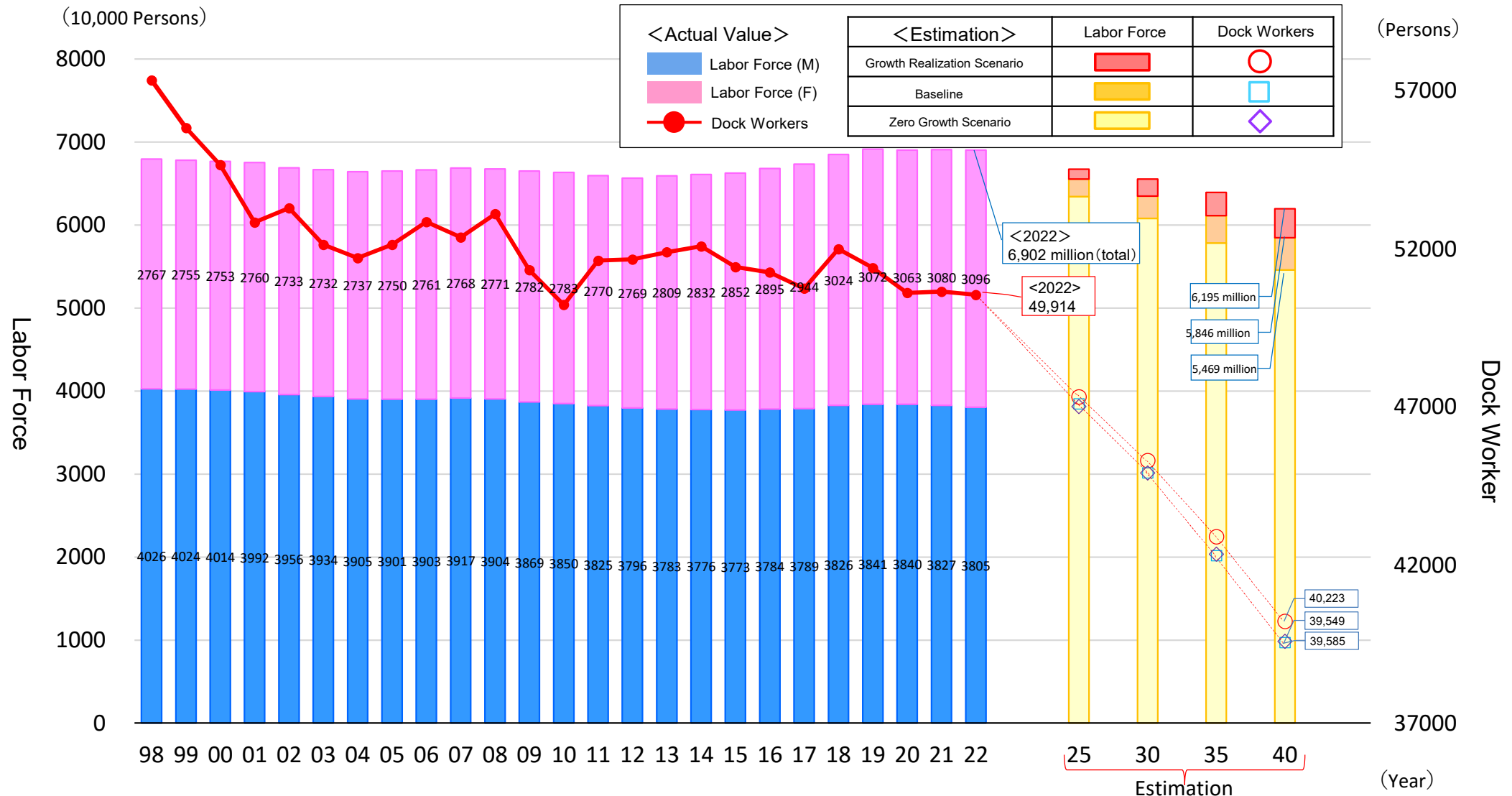
Port Management and Operation Division

Ports and Harbors Bureau

Ministry of Land, Infrastructure, Transport and Tourism(MLIT)

Estimation of Future Dock Worker Numbers

- The number of dock workers in Japan is on a downward trend.
- It is estimated that the number of port workers will decrease by approximately 11,000 to 12,000 between 2019 and 2040 if continuing to decrease at the same rate as the entire labor force.

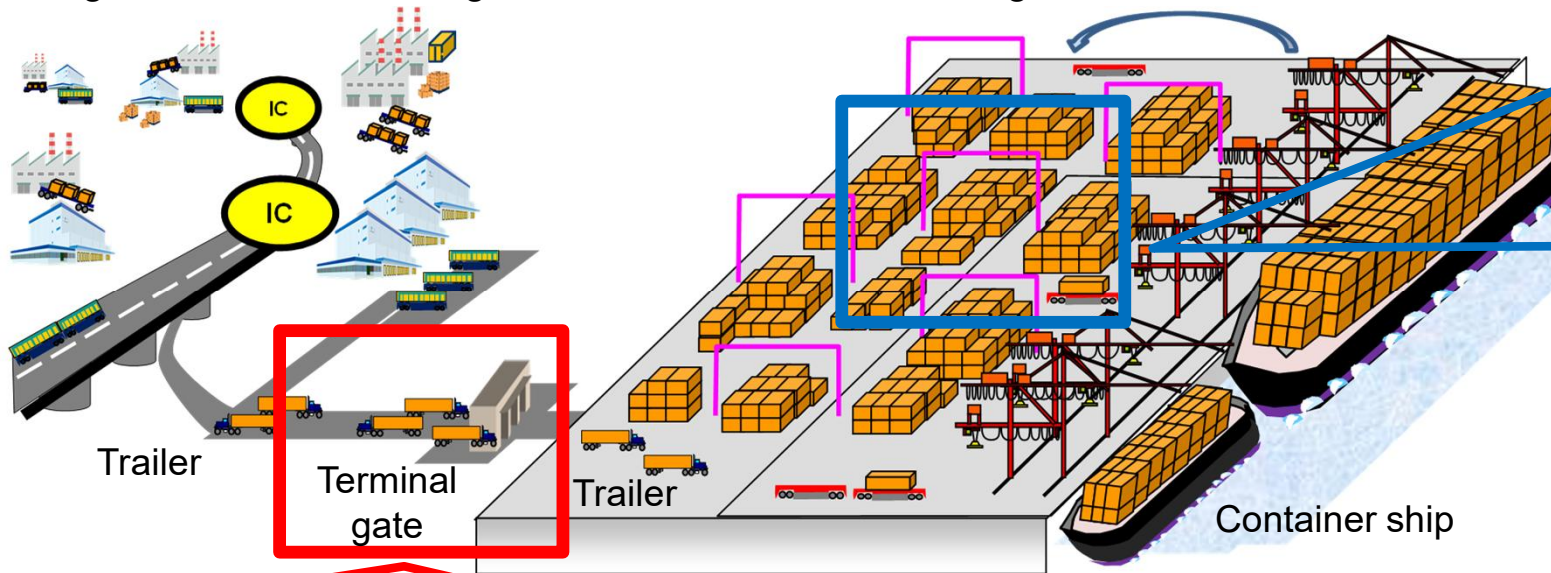


(Source) Number of port workers: Port Transportation Handbook (1989 to 2023 editions); Labor force: Ministry of Internal Affairs and Communications Statistics Bureau "Labor Force Survey"
 Labor force (estimated value): Japan Institute for Labor Policy and Training "Estimates of Labor Supply and Demand - Future Estimates Based on the Labor Supply and Demand Model (2018 Edition)"

Current condition: overcrowding in front of container terminal gates

- Along with increases in the size of container ships, the number of containers unloaded per one call has increased. This leads to an increase in the number of trailers coming to terminals, as well as an increase in the number of containers stored in the yard.

➤ Emergence of overcrowding in front of container terminal gate



The increase in the number of containers stored in the yard

↓
Increase in the frequency of cargo movements

↓
Lowering the efficiency of cargo handling



The number of incoming trailers exceeds the gate processing capacity of the terminal

➔
Overcrowding of incoming trailers in front of the gate.

Overcrowding in front of gates is a long-standing issue

Productivity Revolution at Container Terminals ~ The AI Terminal

- In Japan, The MLIT realizes “The AI Terminal” to improve working environment and increase productivity of the terminal.
- For that, The MLIT has conducted various verifications (AI, remote control, and automation technologies), and also promote introduction of automation and remote operation technologies for cargo-handling equipment and other machinery.

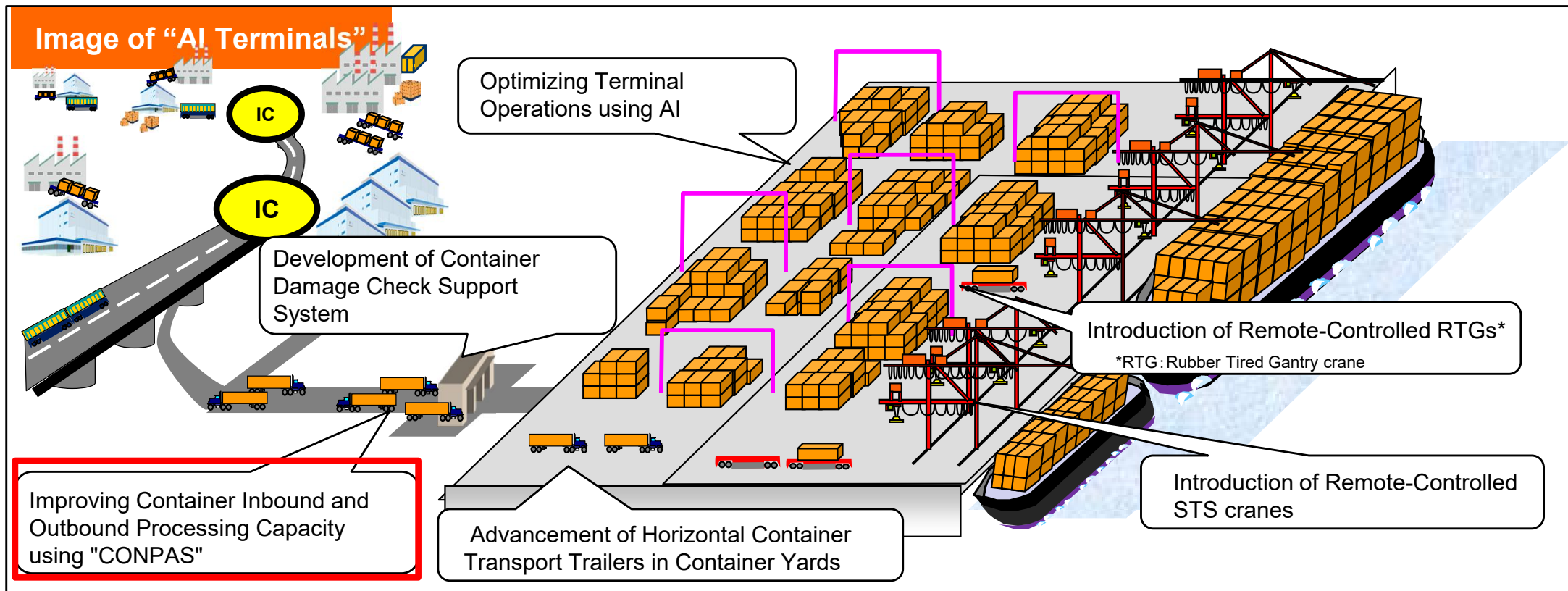
Policy Direction

Minimizing ship loading and unloading time

Improvement of working conditions for dock workers

Minimizing on-site dwell time for trailers

Cost reduction by saving fuel and maintenance costs



Causes of overcrowding in front of container terminal gates:

CONPAS's focus

- Overcrowding in front of terminal gates is caused by multiple factors including (1)~(3)
(1)concentration of trailers at certain times, (2)poor gate processing capacity and (3)insufficient terminal processing capacity.

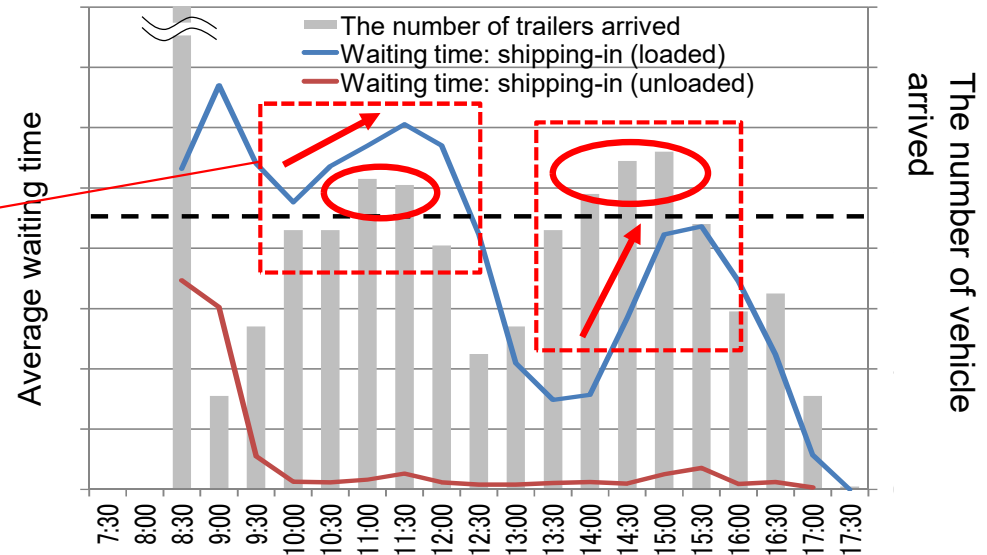
(1) Concentration of trailers at certain times

[Relationship between the number of containers arrived at CT and their waiting time (image)]

- The number of trailers arrived at the terminal exceeds a certain level



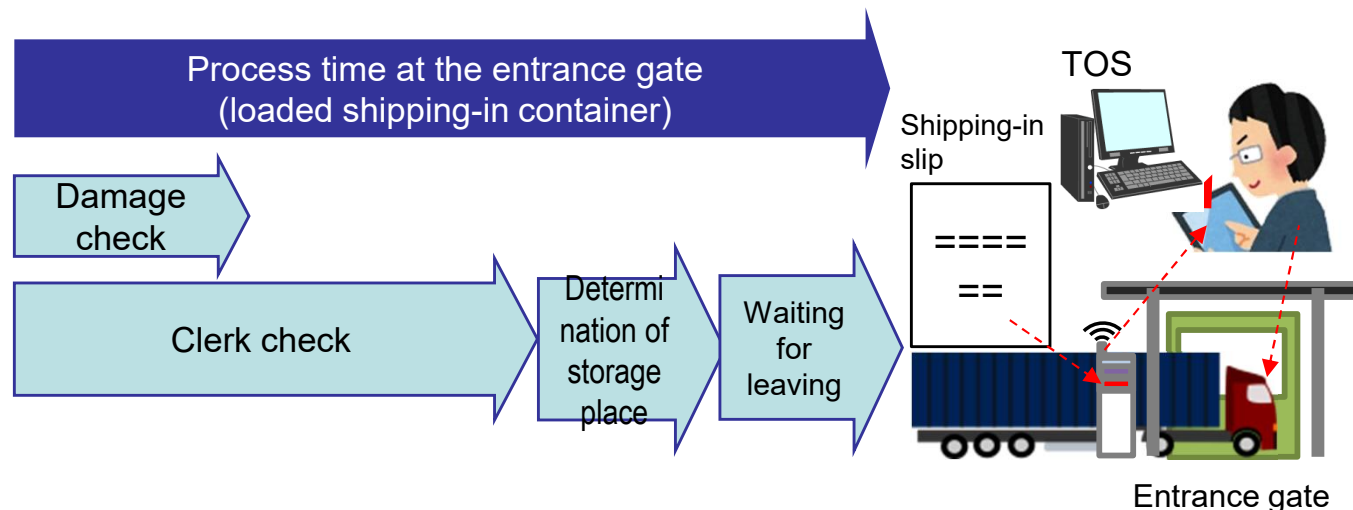
- Trailers that have arrived and are approaching to the gate need to line up.



(2) Poor gate processing capacity

- A certain time is required after trailers' arrivals at the entrance gate in checking shipping-in slips by a clerk.

- When a failure is found with the shipping-in slip information, an additional time is required in checking and corrections.



CONPAS's focus

○ Overcrowding in front of terminal gates is caused by multiple factors including (1)~(3)
(1)concentration of trailers at certain times, (2)poor gate processing capacity and (3)insufficient terminal processing capacity.

(3) Insufficient terminal processing capacity

- When the number of containers stored in the terminal increased, containers are need to be vertically stacked.
- The number of container movements will thus increase to ship out containers, extending the time that trailers spend in the terminal.
- Moreover, when there are less storage places available for incoming containers, smooth, automatic determination of their storage places becomes impossible, which also increases the gate processing time.

[Container movement (image)]

* When three containers are stacked on the shipping-out container, three container movements are needed.

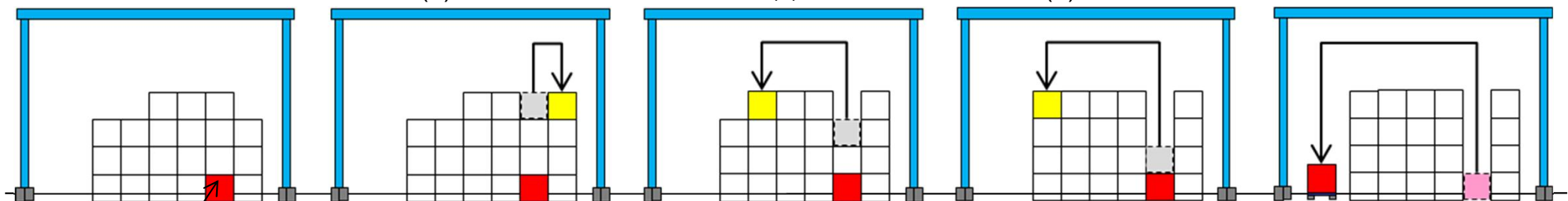
(1) Before the in-advance
container movement

(2) Start

(3)

(4) Finish

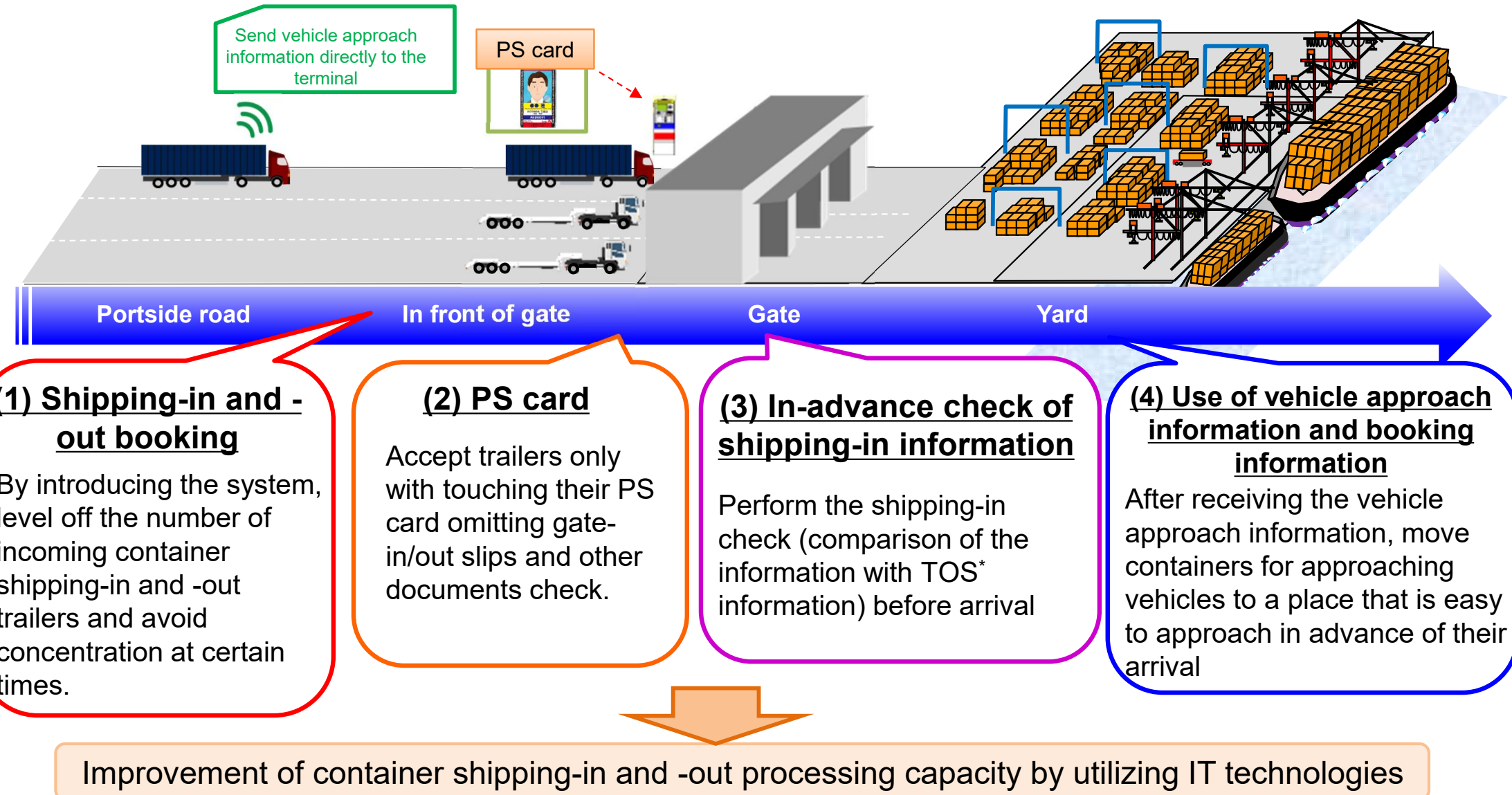
(5) Loading the container
onto chassis



Shipping-out container

Overview of CONPAS (Container Fast Pass)

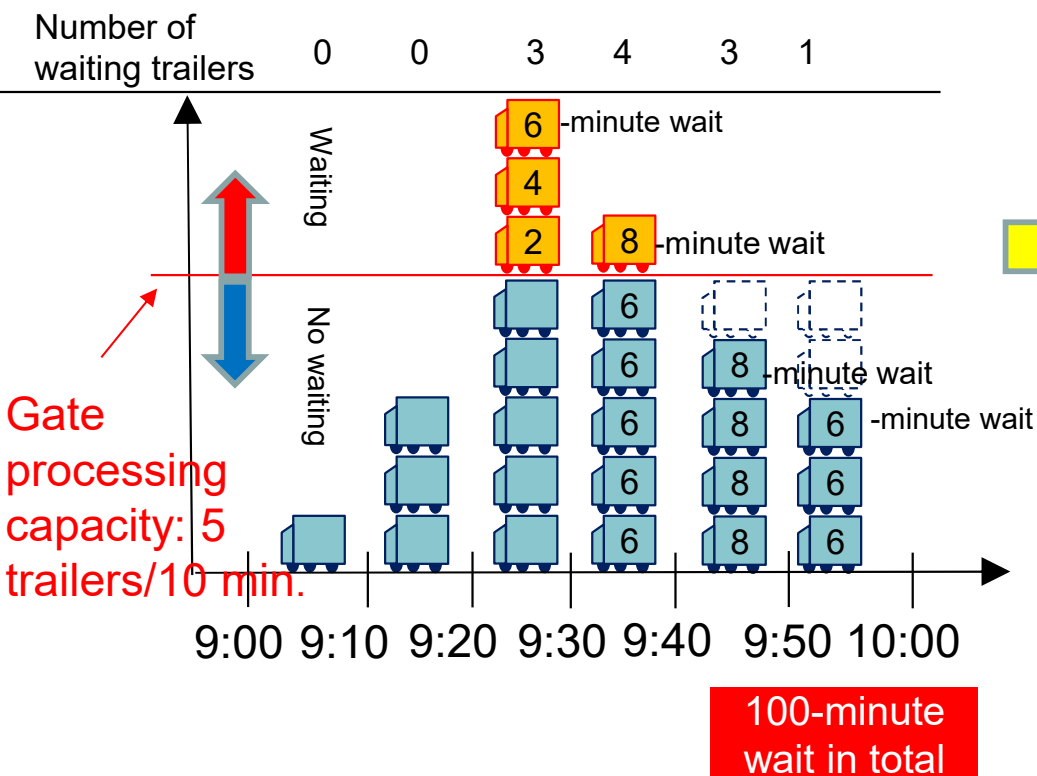
○ CONPAS system has been developed to improve the efficiency and productivity of container distribution by eliminating overcrowding in front of container terminal gates and shortening the time that container trailers spend in the terminals.



Measures using CONPAS against overcrowding in front of container terminal gates (example of the Port of Yokohama)

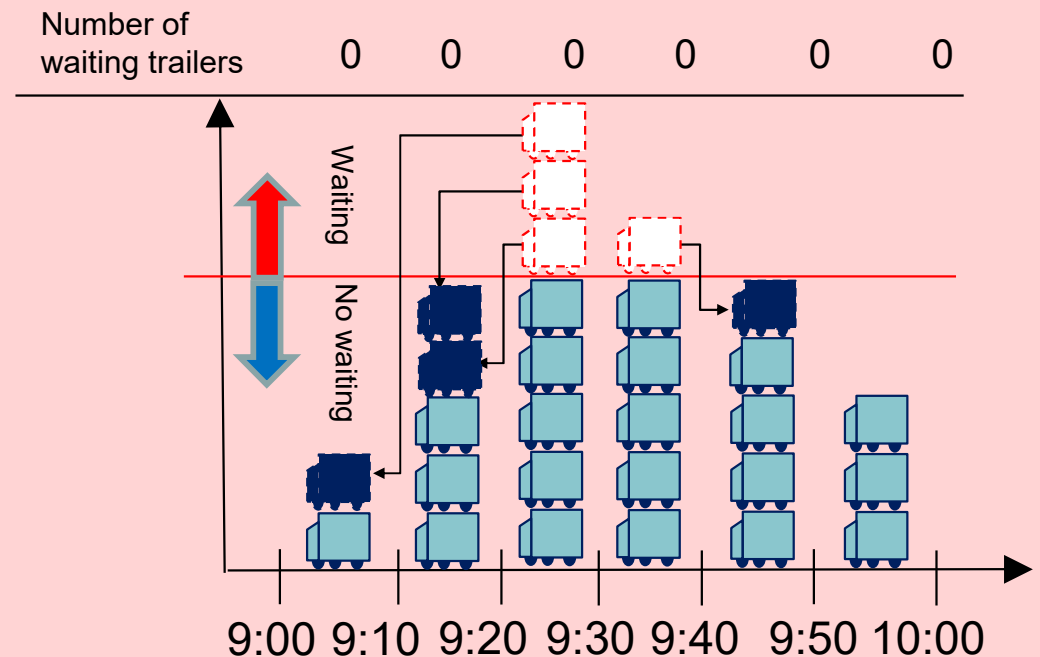
- Elimination of overcrowding in front of container terminal gates by (1) introducing a shipping-in and -out booking system to level off the number of incoming trailers and avoid concentration at certain times, (2) improving the gate processing capacity, and (3) amplifying the processing capacity of terminals.

(0) At present



(1) Introduction of a shipping-in and -out booking system

In-advance designation of the arrival time by setting 5 booking blocks per 10 min.



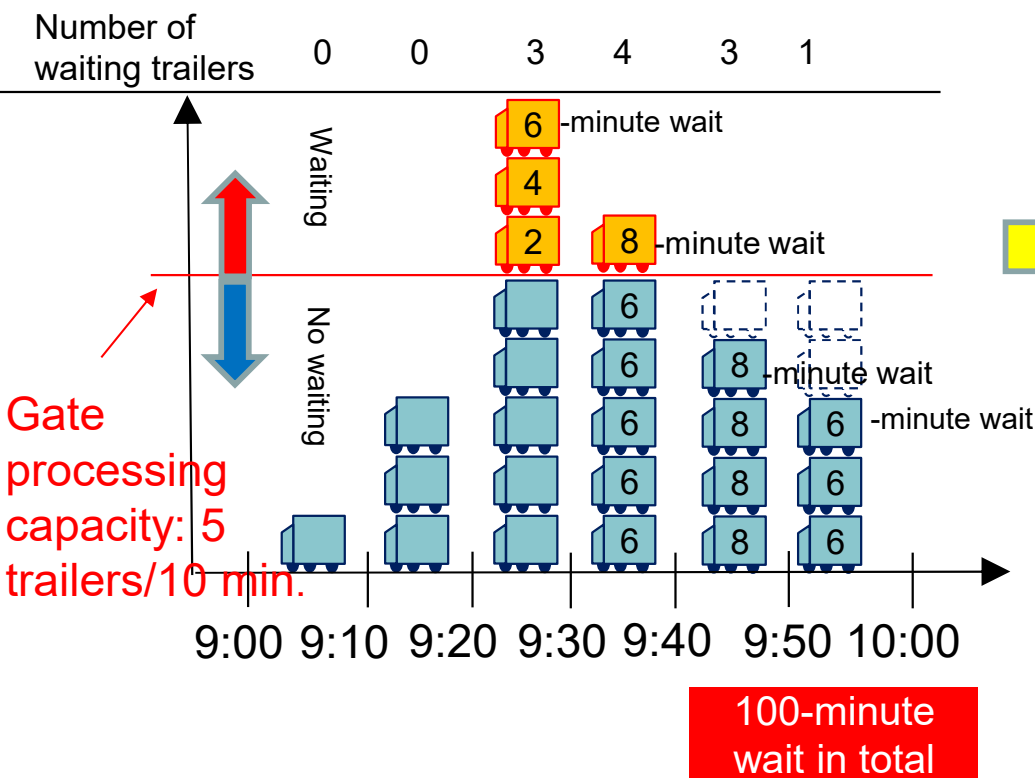
⇒ Improve the probability to book at preferred arrival times by enhancing the gate processing capacity.

Reduction in the waiting time

Measures using CONPAS against overcrowding in front of container terminal gates (example of the Port of Yokohama)

- Elimination of overcrowding in front of container terminal gates by (1) introducing a shipping-in and -out booking system to level off the number of incoming trailers and avoid concentration at certain times, (2) improving the gate processing capacity, and (3) amplifying the processing capacity of terminals.

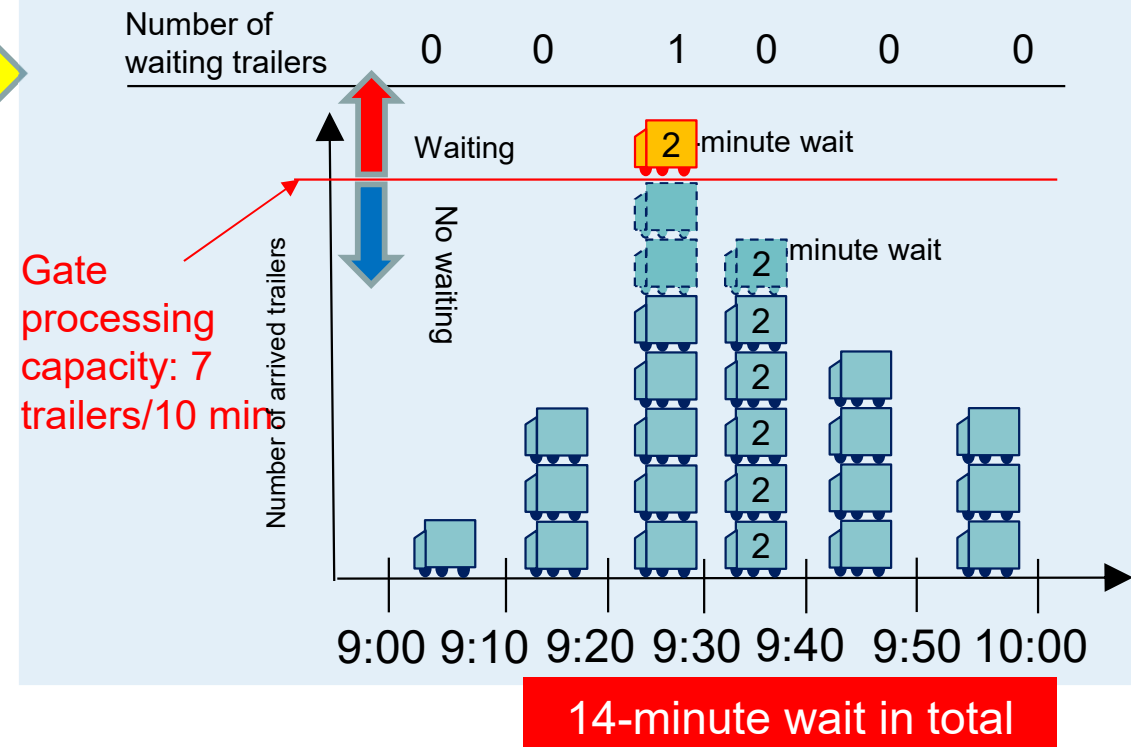
(0) At present



(2) Introduction of the in-advance shipping-in information check and PS card to improve the gate processing capacity

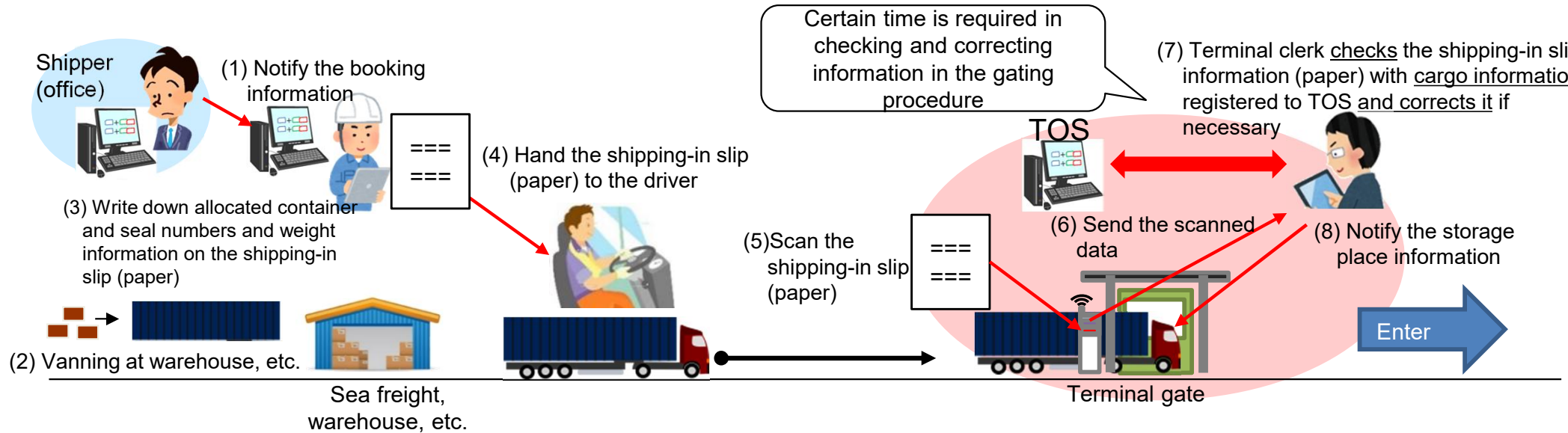
By improving the gate processing capacity, increase the number of trailers that can pass the gate (e.g. 5 to 7 trailers/10 min.)

* When trailers concentratedly arrived, some waiting time still occurs.

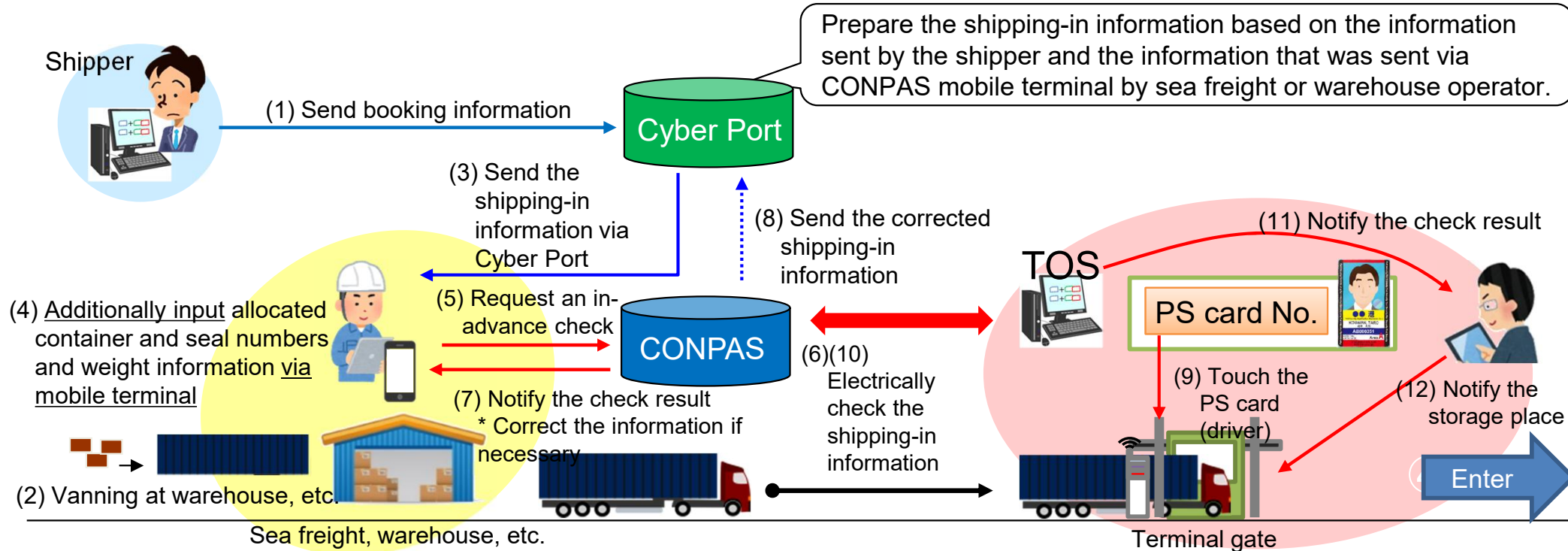


In-advance shipping-in information check system using Cyber Port and CONPAS (concept)

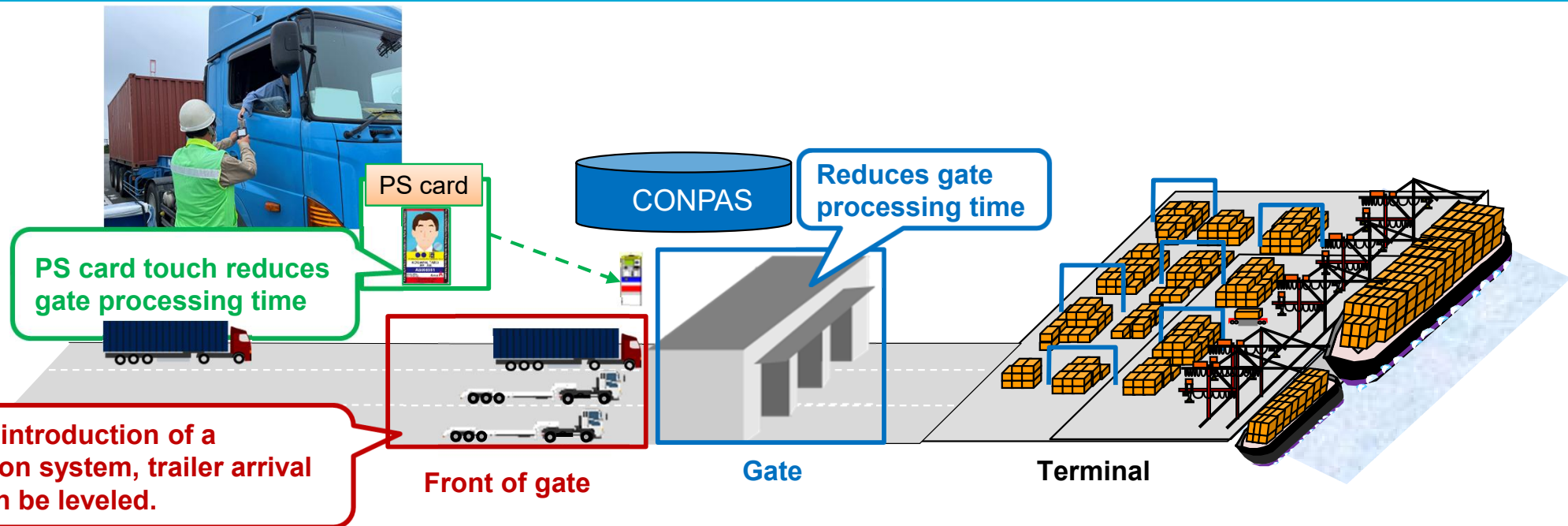
At present



Future



Overview of CONPAS



【Effective case】

[Yokohama Port Minami Honmoku Terminal]

(Reduction in waiting time)

Before introduction: Average waiting time in front of gate was approx. 30 minutes



After introduction: Average waiting time in front of gate reduced to approx. 7 minutes

[Kobe Port PC-18]

(Reduction in gate processing time)

Before introduction: Average gate processing time was 1 minute 34 seconds



After introduction: Average gate processing time reduced to 23 seconds

Current CONPAS Deployment

- Full-fledged operation has started since April 2021 in the Port of Yokohama. Based on the result of the operation in the Port of Yokohama, It is also currently in operation at Tokyo ,Osaka and Kobe .
- Trial operations are also underway at other terminals.

Day	Terminal	
March 2021	Yokohama Port Minamihonmoku Container Terminal	Full-time operation has started(*)
March 2024	Osaka Port Yumeshima Container Terminal	Full-time operation has started
September 2024	Kobe Port PC-18 Container Terminal	Full-time operation has started
August 2025	Tokyo Port Oi Container Terminals No. 1 & 2	Full-time operation has started
January 2026	Tokyo Port Oi Container Terminals No. 3 & 4	Full-time operation has started
March 2026	Tokyo Port Oi Container Terminals No. 6 & 7	Full-time operation has started
March 2026	Kobe Port PC-14-17 Container Terminal (CT)	Full-time operation has started
July 2026	Yokohama Port Honmoku BC Terminal	Full-time operation (Reservations via CONPAS are required as a general rule) has started

(*) Full-time operation of the “Gate Appointment Function” and the “PS Card-based Reception Function” commenced in March 2021. Full-time operation of the “Advance Verification Function for Container Delivery Information” commenced in April 2021. 11

Trial Operation about

“The system that requires reservations via CONPAS as a general rule”

- At the Honmoku Pier BC Container Terminal (BC2), pilot operations requiring reservations as a general rule were conducted three times, with the scale expanded in phases.
- August: 2 days during the off-peak period (Obon holiday) → November: 2 days during a normal operating period → March: 5 days during a normal operating period

	13th Pilot Operation	14th Pilot Operation	15th Pilot Operation
Implementation Periods	Aug. 13-14, 2025 (2 days)	Nov. 26-27, 2025 (2 days)	Mar. 2-6, 2026 (5 days)
Applicable Container	All container categories (Export: Laden/Empty, Import: Laden/Empty) ※Applies to all containers processed for gate-in/gate-out at the BC2 Gate		
Participating Companies	All companies using the BC2 Gate for container pick-up and delivery. ※Container pick-up and delivery via the BC2 Gate require a CONPAS® reservation.		
Reserved Vehicle Route	Central Road of Pier C ~ BC2 Gate		
Reservation Hours	08:30-11:30, 13:00-16:30		
Reservation Capacity	Import (Laden/Empty): 3-4 vehicles per 3-minute slot Export (Laden/Empty): 4-9 vehicles per 3-minute slot	Import (Laden/Empty) : 5-8 vehicles per 3-minute slot Export (Laden/Empty) : 4-9 vehicles per 3-minute slot	
results	Number of CONPAS Transactions: 1,406 trucks / 2 days	Number of CONPAS Transactions: 3,022 trucks / 2 days	Number of CONPAS Transactions: 8,089 trucks / 5 days

Trial Operation Results about

“The system that requires reservations via CONPAS as a general rule”

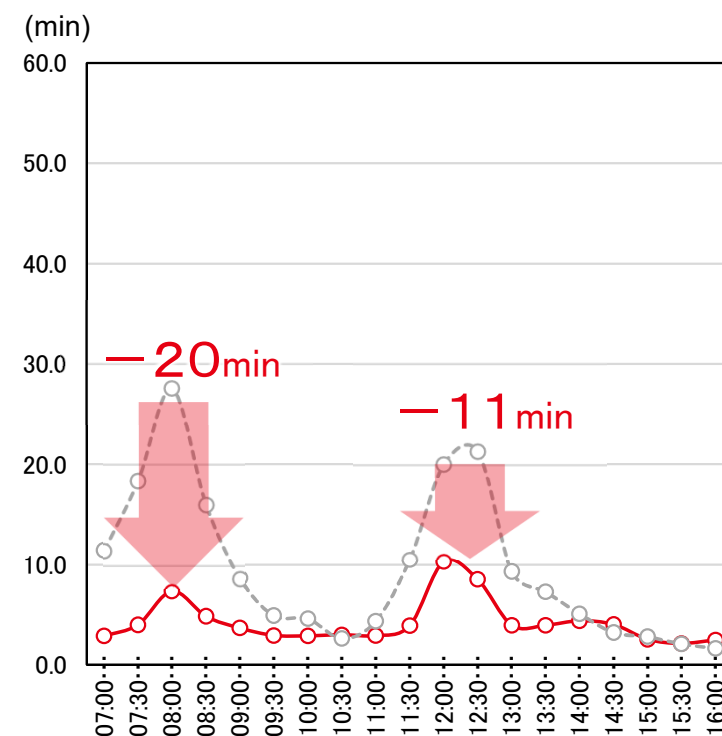
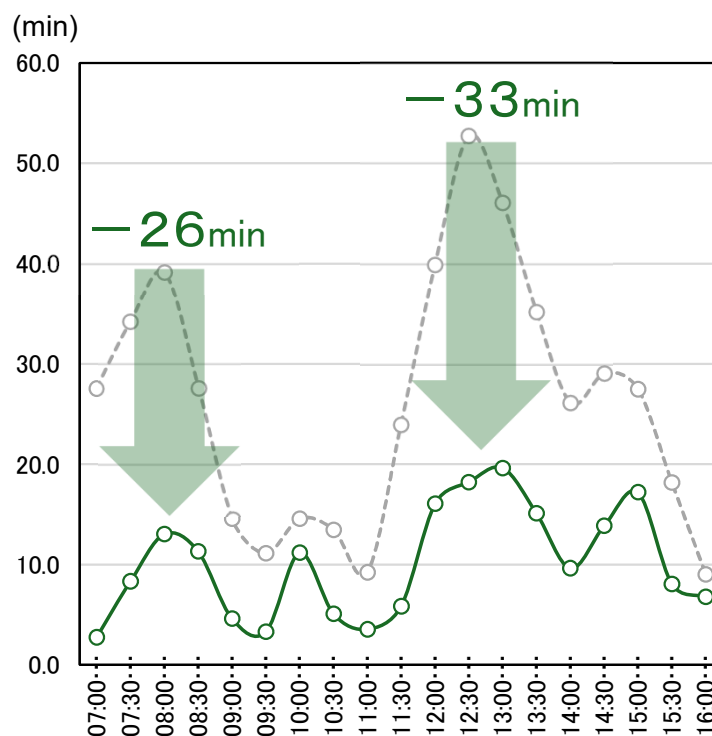
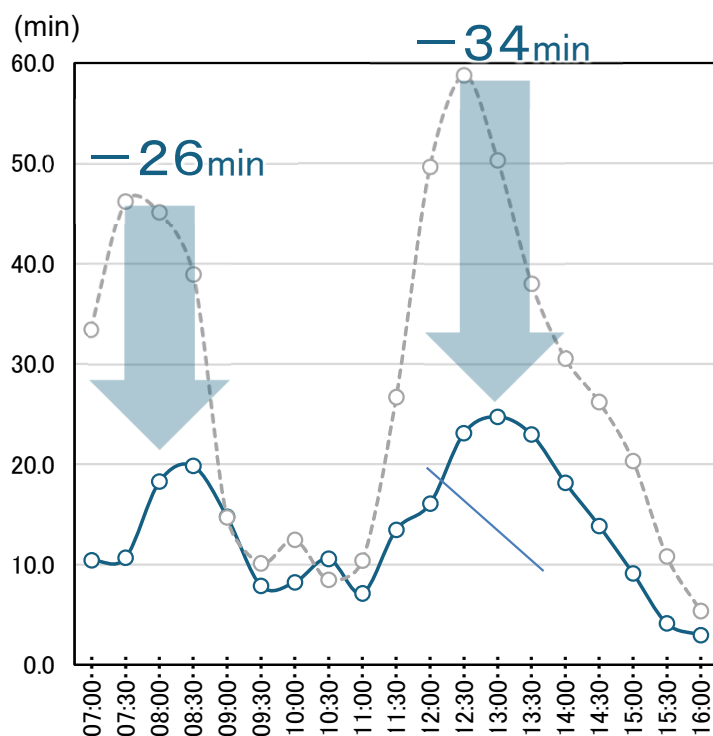
- Loaded container gate-in : The maximum waiting time was **reduced by up to 34 minutes**, from 59 minutes outside the pilot operation period to 25 minutes during the pilot operation period
- Empty container gate-in : The maximum waiting time was **reduced by up to 33 minutes**, from 53 minutes outside the pilot operation period to 20 minutes during the pilot operation period
- Exit : The maximum waiting time was **reduced by up to 18 minutes**, from 28 minutes outside the pilot operation period to 10 minutes during the pilot operation period.

【Gate Waiting Time (30-min average)】 ※Excluding waiting time during closed hours

Loaded container gate-in
(30min average : 5~59min⇒3~25min)

Empty container gate-in
(30min average : 9~53min⇒3~20min)

Exit
(30min average : 2~28min⇒2~10min)



—○— : during the pilot operation period - - -○- - : outside the pilot operation period

“The system that requires reservations via CONPAS as a general rule”

Operation Overview

Implementation Period	From July 13, 2026
Applicable Containers	All container categories (Export: Laden/Empty, Import: Laden/Empty) ※Applies to all containers processed for gate-in/gate-out at the BC2 Gate
Applicable Companies	Includes member companies of the Kanagawa Trucking Association's Marine Container Subcommittee, as well as all other companies using the BC2 Gate for container pick-up and delivery. ※Container pick-up and delivery via the BC2 Gate require a CONPAS® reservation.
Reserved Vehicle Route	Central Road of Pier C ~ BC2 Gate Exception Vehicles (e.g., vehicles not registered with a PS Card system) must first proceed through the Exception Vehicle Reservation
Reservation Hours	08:30-11:30, 13:00-16:30
Reservation Capacity	Import (Laden/Empty): 5-8 vehicles per 3-minute slot Export (Laden/Empty): 4-9 vehicles per 3-minute slot
Permitted Arrival Time	Vehicles must arrive at the reservation status confirmation point within 30 minutes before or after their reserved time slot.
Reservation Window	Reservations may be made from 14:00, three business days prior to the cargo handling date, until the end of the permitted arrival time on the day of operation.
Penalty System	Applicable ※Penalty points will be accumulated in common with other Yokohama Port terminals under permanent or trial operation. However, because this is a "reservation-required in principle" system, the penalty applied will be "Usage Restriction (same-day reservations only)" rather than "Suspension of Use."

Thank you for your attention.

CONPAS®
Container Fast Pass