

ADAPTIVE **RECOGNITION** PORT SYSTEMS

INDUSTRY · FERRY TERMINALS

Ferry Terminals

From the approach road to the ship's ramp.

Automate every stage of the drive-on ferry terminal. Faster boarding, fewer manual checks, and headroom for peak season.

EVERY SAILING RUNS AGAINST THE CLOCK.



SCAN TO SEE
IT ONLINE



UP TO 600

Vehicles per hour, per lane

UP TO 68%

Shorter average boarding
time per sailing

99.7%

ANPR read accuracy, day and
night

MODULAR

One subsystem at a time, or
end to end

01 · THE BASICS

What is a ferry terminal?

Five zones, one fixed departure.

A ferry terminal is the shore facility where a drive-on ferry, a Ro-Pax ship, docks so vehicles, foot passengers and freight can roll on and roll off over a ramp called a linkspan.

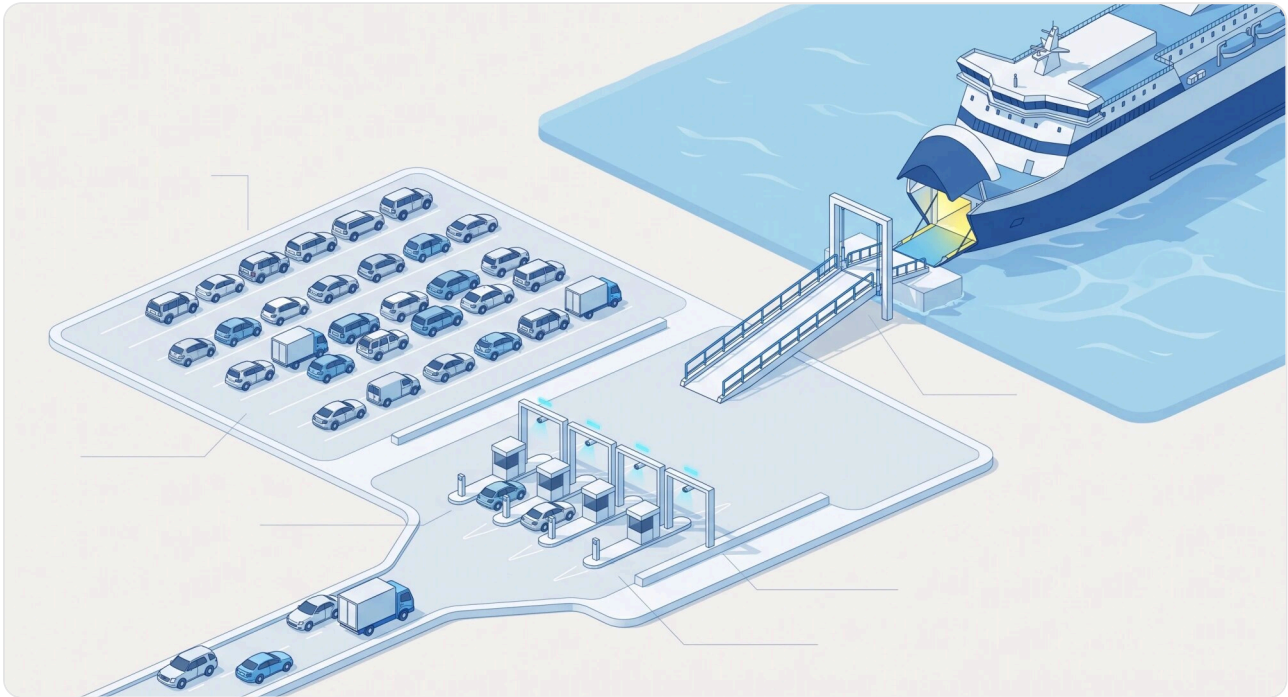


FIGURE 1 The five zones every vehicle passes through: approach road, check-in lanes, marshalling yard, linkspan ramp and the ferry car deck.

How a sailing works

Before each sailing, cars and trucks arrive on the approach road, pass through check-in lanes and wait in a marshalling yard. Crew then wave them up the ramp onto the car deck.

Why it is hard

Unlike an airport, passengers stay in their vehicles. Every car, trailer and family has to be identified, counted and matched to a booking while sitting in a queue against a fixed departure time. Miss the window and the ship sails part-empty or late.

Every stage is a timed bottleneck. That is why automating each one is worth so much, and why the stages need to share one record of each vehicle.

02 · INDUSTRY CHALLENGES

What ferry operators face every day.

Peak-season pressure, manual workflows and tight schedules combine into real operational risk. These are the bottlenecks the platform removes.

01

Peak-season throughput

Summer holidays and bank weekends multiply vehicle volumes 3–5x. Lanes back up, ships sail half-empty, refunds pile up.

02

Manual check-in bottlenecks

Operator-driven booths slow processing to 45–90 s per vehicle. Staffing peak shifts is expensive and error-prone.

03

Booking exceptions

Mismatched plates, wrong sailings, expired QR codes. Every exception needs a manual override and leaves a long queue behind it.

04

Multi-lane coordination

Approach, check-in, boarding and deck loading each run on their own clock. Without a shared data layer, sailings slip.

THE OPERATIONAL REALITY

Peak season is the real test

Any terminal runs fine on a quiet Tuesday. The test is a summer Saturday, when vehicle volumes climb three to five times and every lane is full.

A single manual check that takes 60 seconds instead of 20 backs the queue onto the approach road. One late sailing pushes the next one late, and the delay cascades across the day.

Crew also owe a legal duty under SOLAS to count and record everyone on board before departure. Done by hand, with people in their vehicles, that headcount is slow and easy to get wrong.

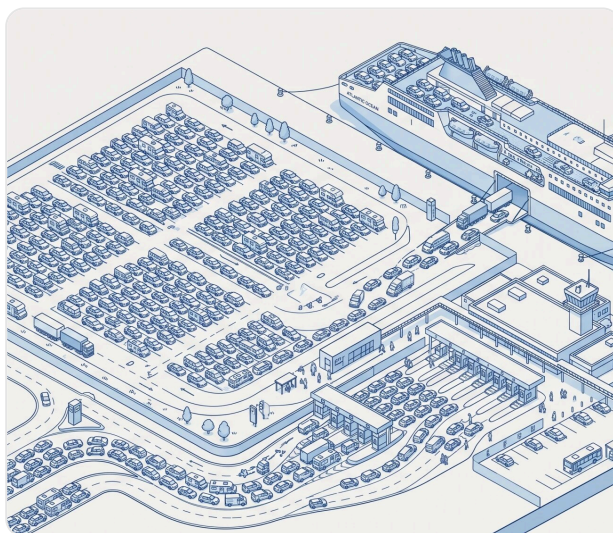


FIGURE 2 Peak day: a full marshalling yard, every lane in use.

03 · THE TERMINAL JOURNEY

One platform for every stage of the crossing.

Each modular subsystem automates one stage, from the approach road to the car deck. Deploy them one at a time or as a single end-to-end checkpoint.

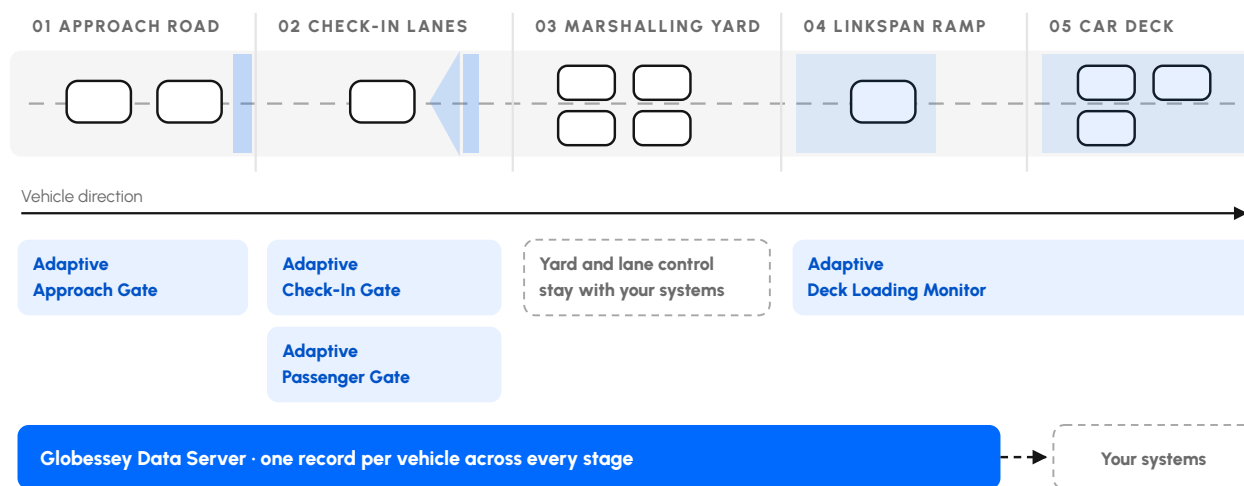


FIGURE 3 The vehicle journey mapped to the subsystems. Blue: Adaptive Recognition supply and sensing. Dashed grey: the port's own systems.

BY THE NUMBERS

Outcomes ferry operators see

Up to **600**

VEHICLES PROCESSED PER HOUR,
PER LANE

Up to **68%**

REDUCTION IN AVERAGE BOARDING
TIME PER SAILING

99.7%

ANPR READ ACCURACY, DAY AND
NIGHT

Best results measured at reference deployments. Actual performance depends on port layout, traffic mix, lane design and the integration on the port's side.

HOW TERMINALS ROLL IT OUT

01

Start where the queue is

Deploy one subsystem at the stage that costs you most time today.

02

Add stages over time

Each new subsystem writes to the same GDS record, so the stages line up as you grow.

03

Keep a manual fallback

Roll out lane by lane and bring gate staff onto the new flow in phases. No rip-and-replace.

04 · THE SUBSYSTEMS

Stage by stage, what each subsystem does.

Scan a code to open the subsystem page, with its film, specifications and the record it writes.

STAGE 01 · APPROACH ROAD**Adaptive Approach Gate**

First-line multi-lane ANPR at the port boundary. Plates are pre-read 50–100 m out, so every vehicle is identified before it reaches the lane.

</lanes/approach>**STAGE 02 · CHECK-IN LANES****Adaptive Check-In Gate**

Einar cameras and the Osmond Advanced Passport Reader capture plate and travel document at the lane. Your check-in system receives one identity record and matches it to the booking and sailing.

</lanes/boarding>**STAGE 03 · IN THE VEHICLE****Adaptive Passenger Gate**

IR-based passenger counting through tinted glass at lane speed, so the headcount and the SOLAS manifest agree. Supports the operator's headcount obligation.

</lanes/passenger>**STAGE 04 · THE RAMP AND DECK****Adaptive Deck Loading Monitor**

Vidar smart cameras at the ramps record what actually drove aboard. Intellio cameras on the decks follow each unit to its final position, for comparison with your load plan.

</systems/deck-loading-monitor>**FREIGHT ON THE SAME SAILING****Adaptive Freight Gate**

For Ro-Pax routes that carry trucks and trailers: ANPR, ADR and IMO hazmat reading and a condition scan in one free-flow pass, with optional LiDAR dimensions.

</lanes/freight>

05 · COMPLIANCE

Headcount and border checks, without stopping the lane.



FIGURE 4 Check-in lanes ahead of a sailing. Every vehicle here needs an identity record and a headcount before it boards.

SOLAS · Directive 98/41/EC**An accurate, auditable headcount**

Counting and recording everyone on board before departure is a legal duty. The Adaptive Passenger Gate counts front, rear and third-row occupants through tinted glass and time-stamps every count in GDS, ready to reconcile against the manifest. It supports the crew's obligation. Responsibility stays with the operator.

EES and ETIAS**Recover the throughput border checks take**

As the EU Entry/Exit System and ETIAS roll out, every non-EU traveller adds checks at the gate. The Osmond reader reads the passport chip and MRZ and authenticates the document at the lane. ANPR links it to the vehicle, and GDS stores it under a GDPR-compliant regime.

Where the border line sits. Adaptive handles the travel document and the data. The mandated live biometric capture (face and fingerprints) and the immigration decision stay with Border Force and the EES kiosks. We make everything around them faster.

06 · PLATFORM AND SERVICES

One data layer, one partner for the lifecycle.

Globessey Data Server

GDS sits under every subsystem. Each stage writes to the same record of the vehicle, so approach, check-in, headcount and deck position line up for every sailing.

- On-premise by default, on your own hardware
- Documented APIs and SDKs to your booking, ticketing and manifest systems
- Security posture aligned with NIS2, GDPR and ISO

Lifecycle services through ARGS

Every deployment is backed by Adaptive Recognition Global Services in Copenhagen. SLA tiers are scoped per customer.

- **24/7 monitoring** of device health, lane status and data flow
- **Hardware replacement** from spares held under the SLA
- **Software updates** so new plate designs are covered
- **Incident response** with one number and one accountable team

SCOPE OF SUPPLY

Delivered by Adaptive Recognition

- Vidar, Einar, Lynet and Intellio cameras
- The Osmond Advanced Passport Reader
- Carmen recognition engines
- Triggering sensors and the gate control PC
- Globessey Data Server, on your own hardware (optional)
- Lifecycle services through ARGS

Provided by the port or its integrator

- Self-service kiosks and their software
- Barriers, traffic lamps, LED displays and signage
- LiDAR and weigh-in-motion, where fitted
- Cabinets, power, cabling and network
- Gantries, foundations and civil works
- Integration into ticketing, booking and manifest systems

Automation, integration and validation stay with your own systems. We identify the vehicle, read the document and hand over the record. What happens next is decided by the port.

ENGAGEMENT MODEL

End-to-end partner

From hardware and software to deployment, monitoring and lifecycle services. One team, accountable from day one.

Stage-specific partner

Bring us in where it matters most. Roll out lane by lane and keep a manual fallback during the switch. No rip-and-replace.

GET IN TOUCH

Modernise your ferry terminal before the next peak.

Tell us about your routes, sailings and peak loads. We will scope an end-to-end configuration and show you exactly what deployment looks like.

WHAT TO HAVE READY

Traffic volumes

Peak and off-peak vehicle counts, freight and passenger mix, peak hours.

Site layout

Number of lanes, gate locations, distances between checkpoints, network access.

Existing systems

Booking, ticketing, customs and traffic-management platforms in use.

Your goals

Speed, accuracy, compliance, cost, or all of them.

WHO YOU WILL TALK TO



Péter Tomolák

Port Systems · Business Development · Budapest

Your first point of contact. Péter works with ferry terminals, Ro-Ro ports and integrators across Europe to find where automation pays back fastest.

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This industry online

The terminal journey, the subsystems and the outcomes.

adaptiveportsystems.com/industries/ferry-terminals



Book a consultation

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