

The Gateway Access Point

Lever for a smart and sustainable
Port Logistics System in the Antwerp area

Strategic note

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The port of Antwerp-Bruges, like many major ports, struggles with the congestion caused by road haulage. Although constituting only minor part of the traffic on the city's ring road, heavy truck transport to and from the port significantly contribute to congestion and air pollution, impacting the livability of Antwerp and surrounding areas. With the upcoming Oosterweel connection infrastructure project aiming to close the ring road, this issue threatens to escalate, unless smart, sustainable and efficient solutions are implemented urgently.

This vision note proposes the Gateway Access Point (GAP) as a key strategy to address this challenge in a port area. Inspired by the success of Urban Consolidation Centers (UCCs), GAPs would operate as physical nodes alongside major access 'roads' to the port. Here, containers could be rapidly transferred onto high-frequency barge or train services, significantly reducing the number of truck movements within the city and port area. By guaranteeing open access to all port users and strategically positioning GAPs near existing rail and barge connections, we can transform in-port transportation into an efficient, timetable-driven open intra-port transport system. This approach not only promises to alleviate congestion and improve air quality but also presents a unique opportunity to boost the long-term sustainability and accessibility of Antwerp-Bruges's port operations.

GAP- Gateway Access Point

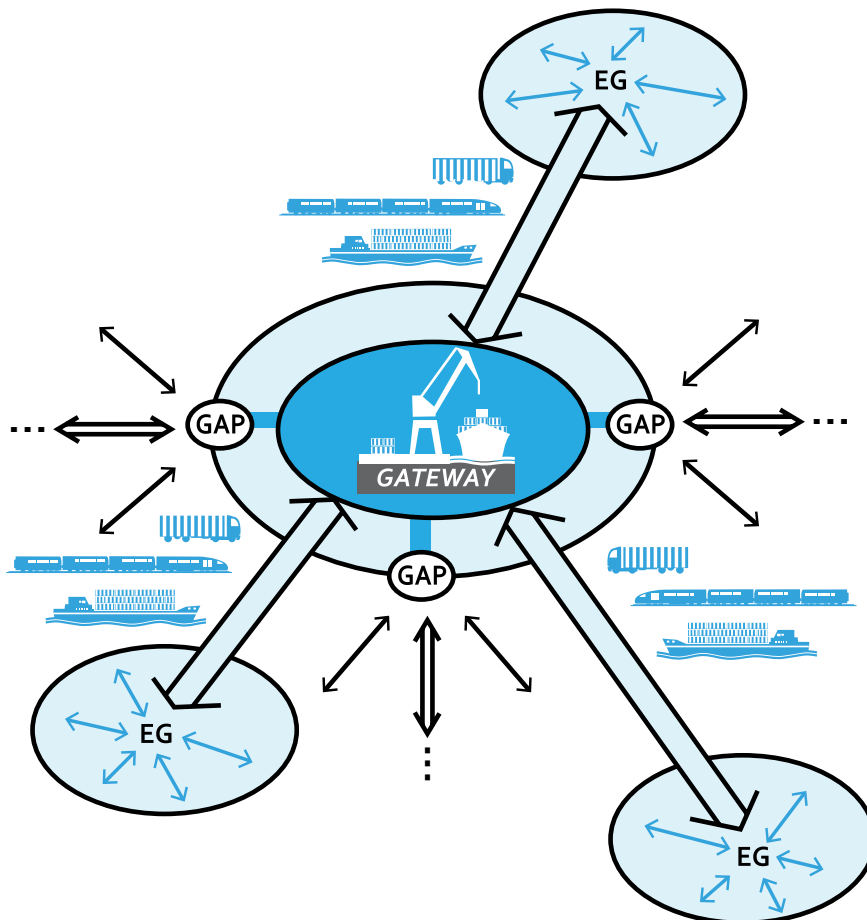
The Gateway Access Point (GAP) is a physical infrastructural node, stationed alongside a major access 'road' to the port where containers are seamlessly transhipped onto high frequency barge or train shuttles to and from the deep sea terminals inside the port area. These services belong to the intra-port transport system.

The Gateway Access Point (GAP) operates as a remote gate situated at the edge or the perimeter of the port area. Here, outbound export containers are prepared for transport into the port, while inbound import containers from the port are transferred to the multimodal hinterland transport. The GAP serves as a vital transshipment point, facilitating the seamless transfer of containers between various modes of transportation and between different transport systems, such as long-distance hinterland transport and intra-port transport. This strategic function optimizes logistics flows and significantly enhances the efficiency and sustainability

The GAP connects the long-distance hinterland transport with the intra-port transport

of the transportation process. By avoiding delays and congestion within the port area, transporters benefit from streamlined operations. Importantly, cargo can be conveniently delivered for export or picked up upon import at the edge of the port area, further enhancing operational efficiency.

The Gateway Access Point (GAP) and Extended Gateway (EG) constitute the core elements of the port's hinterland strategy. The EG typically encompasses a cluster of industrial and/or distribution activities in hinterland regions. Often, the EG is linked to the port through a (multimodal) corridor, connecting a wet- or dry-port



The structure of the Gateway , the Gateway Access Points and the Extended Gateways

container terminal to the port. In contrast to the GAP, which operates with high frequency and often time-tabled shuttles, transportation on the corridor to and from the EG is more demand-driven.

Open access of the GAP is key to consolidate appropriate volume

The inspiration for the GAP concept comes from a proven success story: Urban Consolidation Centers (UCCs). These are warehouses at the border of the city where packages are consolidated, and instead of countless individual deliveries, maximizing deliveries with fewer vehicles. This smart approach has demonstrably reduced traffic, boosted efficiency for operators, and even increased their profit margins through an increased drop density. Like UCCs, GAP thrives on volume. The more containers consolidated, the greater the impact. These volumes are also key to make the individual business case of each port user positive as the additional handling needs to be offset. Additionally, open access for all port users ensures maximum participation and potential benefits.

The key principles, fundamental to the GAP concept:

1 Decoupling: The key principle of a GAP is decoupling of the hinterland transport from the intra-port transport. Sufficient consolidated volume is needed to make this decoupling efficient and sustainable.

2 Consolidation: Through consolidation volume can be brought together. Collaboration and consolidation leads to the generation of scale, and this holds true for logistics as well. When goods flows are consolidated in corridors, activities are clustered in hubs or nodes, and resources are shared, operations can be conducted on a larger scale, resulting in increased efficiency. In this way, more can be accomplished with less use of capacities.

3 Multimodal: In the port logistics system, every mode of transportation will have a role to play. The key is to select the most suitable transport modality for each component in the chain. This integration demands careful coordination and synchronization both within individual chains (vertical) and between different chains (horizontal), a concept known as synchronomodality.

4 Open access: To achieve maximum consolidation, the goal is to create an open system where all interested parties have access to the infrastructure or logistics services. This concept is often referred to as a neutral or white label system. By sharing capacities extensively, optimal utilization can be pursued, leading to effective deployment of resources (effectivity). The involvement of the port authority is important to guarantee the open access of the GAP as part of the port logistics system.

5 Orchestration: To ensure smooth operations both in the preparatory and operational phases, the involvement of a neutral orchestrator is essential. During the preparatory phase, the orchestrator acts as an architect, while in the operational phase, its role shifts primarily to that of a trustee. This neutral party bears the responsibility of ensuring the proper setup and equitable functioning of the Gateway Access Point (GAP) and, by extension, the entire port logistics ecosystem, especially in cases involving multiple GAPs. Ideally, the orchestrator operates within a port logistics community or ecosystem, which comprises stakeholders bound by a covenant, multi-stakeholder agreement, or commitment statement.

6 Connected intra-port transport system: The barge or rail shuttles transporting the containers between the GAPs and the deep sea terminals should ideally be integrated into and connected with the open access multimodal intra-port transport system.

7 Public-private: Port logistics encompasses various aspects such as mobility, economy, spatial planning, quality of life, and safety. Given the wide-ranging impact, it is evident that public actors, i.e. port authority, have a stake in this domain. However, an approach based solely on imposing or prohibiting measures may not be the most effective, as it can put the private sector on the side (e.g., in the case of imposing zero emission requirements). Finding a middle ground and uniting the interests of both the public and private sectors is crucial. Striking a well-balanced approach between these two entities poses a significant challenge but is key for successful port logistics planning and implementation.

GAP in the Antwerp context

Leveraging its unique position as an inland seaport, the Port of Antwerp-Bruges boasts exceptional opportunities for implementing GAPs, streamlining container movement and boosting sustainability.

To provide some context and, purely as an example, we hereby present some potential interesting locations to serve as GAPs.

Eastbound. The Albert Canal, stretching 20-30km from the port, provides multiple prime locations for establishing GAPs. These strategic nodes would exploit the waterway's efficient transport capabilities. The existing infrastructure at the Antwerp East Port in Grobbendonk, originally designed as a GAP, can readily be activated to optimize container transfer for eastbound traffic.

The role of the GAP complements that of a container terminal.

Southbound. The TCT container terminal in Willebroek emerges as a potential candidate for serving as a southern GAP. Its existing infrastructure and location make it suitable for facilitating container transshipment from road to barges.

Westbound. An innovative approach involves utilizing the North Sea Port (Ghent and Terneuzen) as a western GAP for the Port of Antwerp-Bruges. This container terminal could leverage high frequency vessels or train connections to the various deepsea container terminals of the Port of Antwerp-Bruges.



Schematic impression of the potential GAPs for the Port of Antwerp-Bruges

Stakeholders' Involvement

The establishment of the GAP necessitates extensive engagement and involvement from various stakeholders. This engagement should be organized within a structured governance framework. In a first phase a covenant can be signed.

The involvement and alignment of all stakeholders is vital to create a large support base for the GAP concept

Port of Antwerp-Bruges: Driving force and pivotal role in guaranteeing the open access of the GAP. The GAP can only be successful if sufficient volume is consolidated in order to offset the decoupling of goods. The Port Authority is impartial and neutral towards all stakeholders and owner of the infrastructure of the port. Moreover, the port should encourage its users to use the GAPs to enter or exit the port. The transport back and forth between the GAP and the deep sea terminals should be organized under the port authority to guarantee an open access to all users.

Lantis: Driving force and infrastructure contractor, with an important role in the communication with the various stakeholders, port users and society.

Logistics Service Providers and Carriers to transport the containers between shipper's doorstep and deep sea terminal. With a GAP, these actors have to undergo a behavioral change, as they will have to drive to the GAP instead of the deep sea terminal and pay for this transport. This is an out-of-expense they should have compensated by avoiding abundant congestion and waiting times when driving to the deep sea terminals and by picking up the imported containers at the GAP to their hinterland destination. The support of the transport federations will be important to realize the required change in the transport operations.

Deep sea terminal operators: The high frequency barge and/or train shuttles connecting the GAP with the deep sea terminals should be prioritized at the deep sea terminal. This might require some process redesign at the deep sea terminals.

Container shipping companies are looking to empty their container yard as soon as possible. A frequent shuttle pushing out containers as quick as possible to remote locations should be in line with their strategies of decongestion the deep sea terminals.

Container terminals in hinterland: The GAP fulfills a supplementary function as a container terminal within the hinterland. The latter serves an Extended Gateway in the hinterland and is connected to the main port through a multimodal corridor. While the GAP is intended to complement existing services, it is not designed to divert volume away from these corridors.

Inland barging and rail operators: These actors operate the multimodal connection between the port and the GAP and/or the Extended Gateway.

Forwarders and other intermediaries: These actors are involved in the organisation of the transport and should be involved to include the GAP in their planning.

Customs: Customs activities, such as scanning and inspections, should be conducted at the Gateway Access Point (GAP) as containers are immediately transhipped upon unloading from the ocean vessel at the port. This necessitates collaboration with Customs authorities to facilitate efficient operations.

Shippers: They should be largely informed on the sustainability and efficiency gains of using the GAP so that they will suggest to their logistics service providers to use it.

GAP operator: This operator is appointed by the Port Authority as the "white label" operator to shuttle the containers between the GAP(s) and the deep sea terminals. Ideally, the GAP operator should come with a fixed, high-frequency timetable for the shuttles, developed in collaboration with the port community.

NextPort: Digital platform of the port community. Ideally, the platform can be extended to operate the GAPs.

Civil society: Organizations channeling concerns about livability and sustainability of transport, logistics and mobility.

Knowledge institutions: Analyzing various scenarios for logistics optimization through bundling and decoupling.

To actively involve all stakeholders and to create a support base for the GAP concept, a mix of individual stakeholder dialogues and plenary consultations and workshops will be organized. Therefore, the existing stakeholder's federations and groupings will be useful as contact point.

Action Plan

To bring the GAP into operation, we need a solid Action Plan with a well-defined sequence of activities, all designed to strengthen a growing base of support and willingness. These are the important milestones of the Action Plan:

- 1** Developing the GAP concept and its appropriate governance structure;
- 2** Stakeholders' consultations and workshops to adapt, refine and validate the GAP concept for the Antwerp-Bruges port area;
- 3** Multilateral agreement and overall business model for the GAP, including the overall business case and the business cases for the individual stakeholder groups;

Action plan with indicative timeline of six months

- 4** Implementation plan:
 - Identification of appropriate location(s) and exploration of needed infrastructure investments;
 - Engagement of actors and users – role definition within governance and business model;
 - Connection to digital platform – process synchronization;
 - Set up of KPI dashboard for monitoring.



Communication plan

General communication: "Unlocking the sustainable, efficient and accessible port logistics system : The Port of Antwerp-Bruges leads in the smart orchestration of flows."

Additional communication to reach individual stakeholder groups.