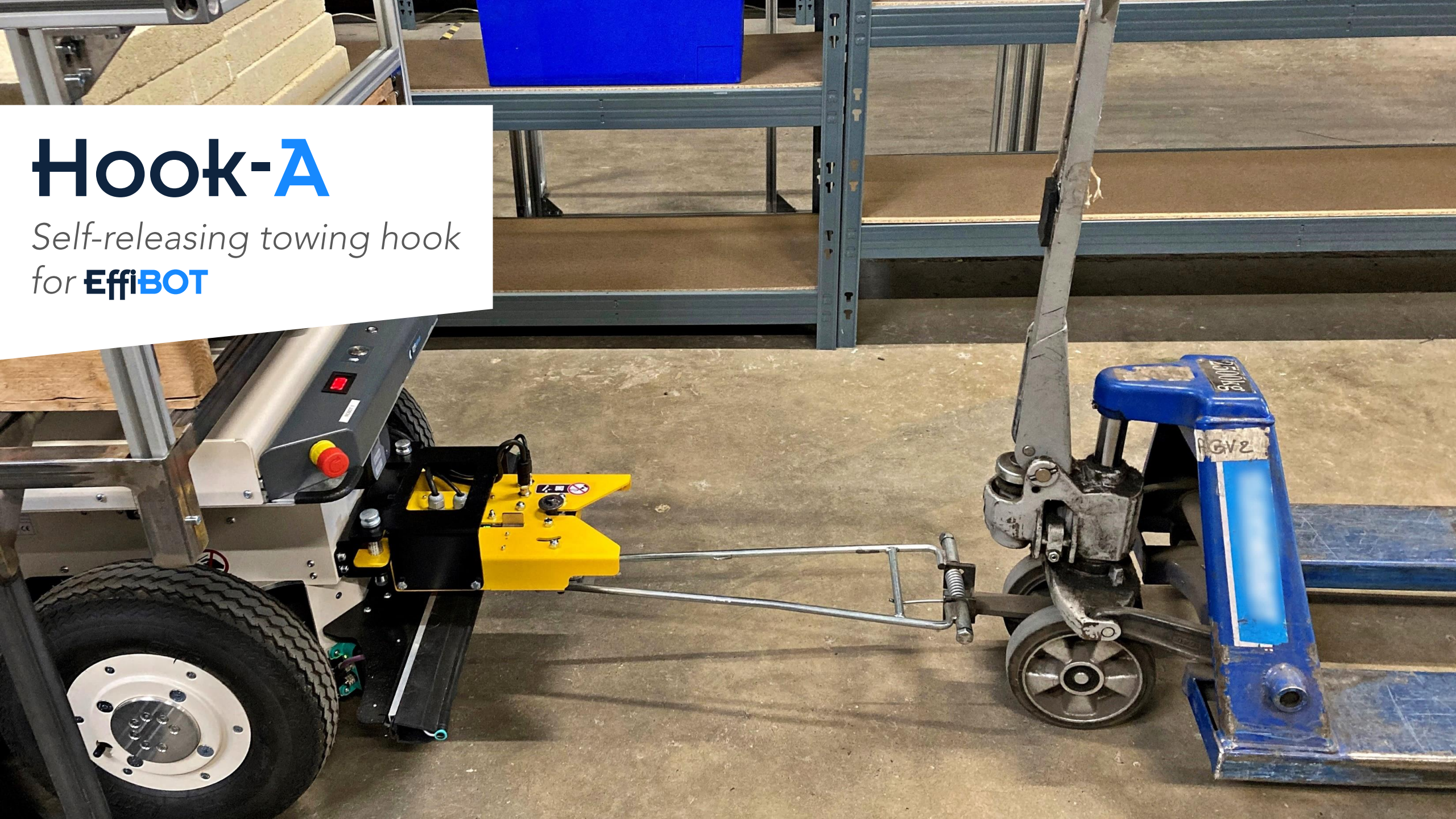

Hook-A
Self-releasing towing hook
for EffiBOT

Hook-A

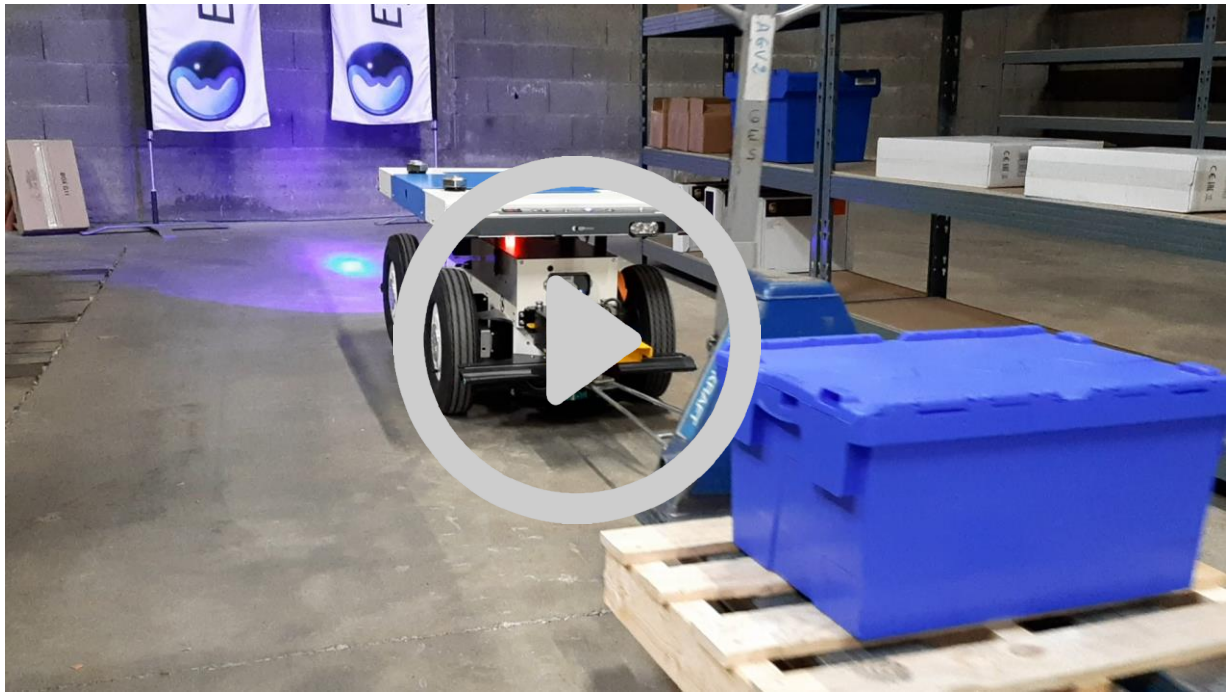
Hook-A is a trailer hook for **EffiBOT**. With its **automatic release function**, it allows the **EffiBOT** to transfer trailers to different destinations in the factory or warehouse.

Hook-A is compatible with our range of **Shaped Trailers**, but can also be used with your own trailers.

This accessory uses **safety electronics** (**PL-d level**) that continuously control and monitor the trailer hook-up.

Benefit from the **Follow-me 360°** collaborative technology, the **EffiBOT**, attached to a trailer, assists your operators in moving heavy loads.

Use cases



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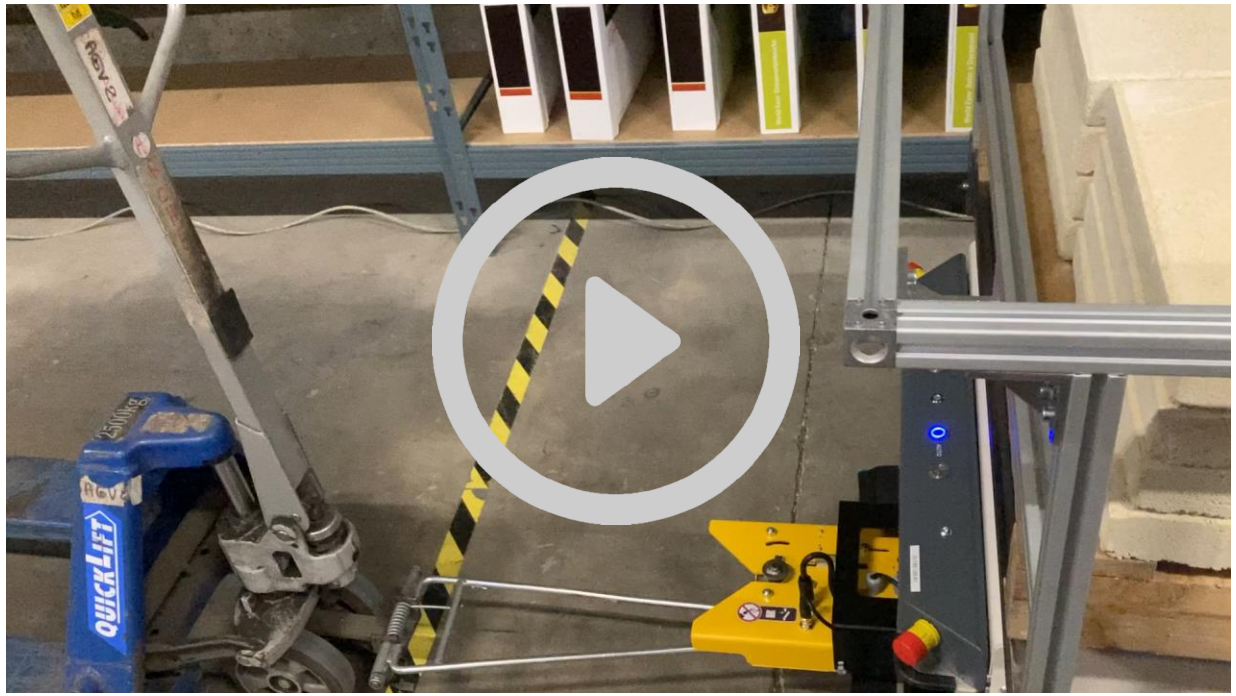

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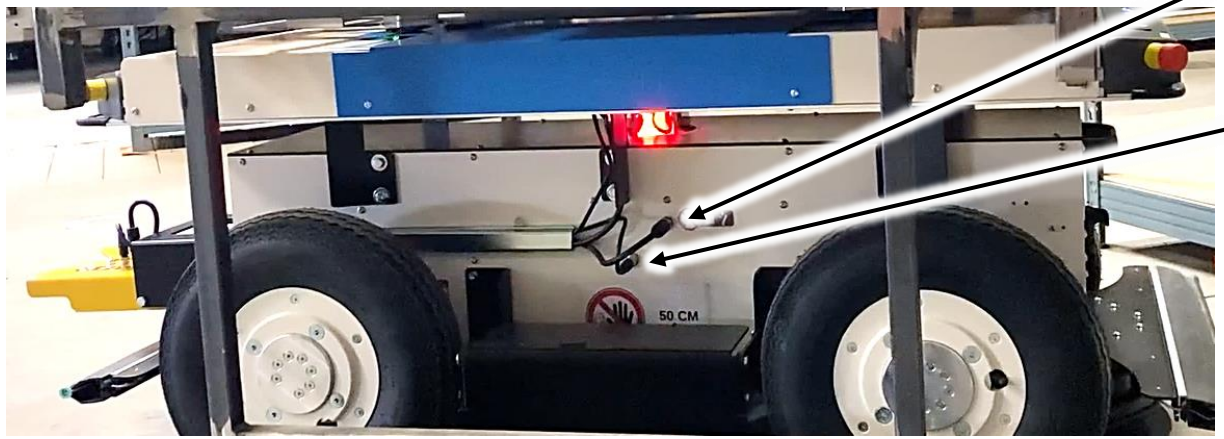
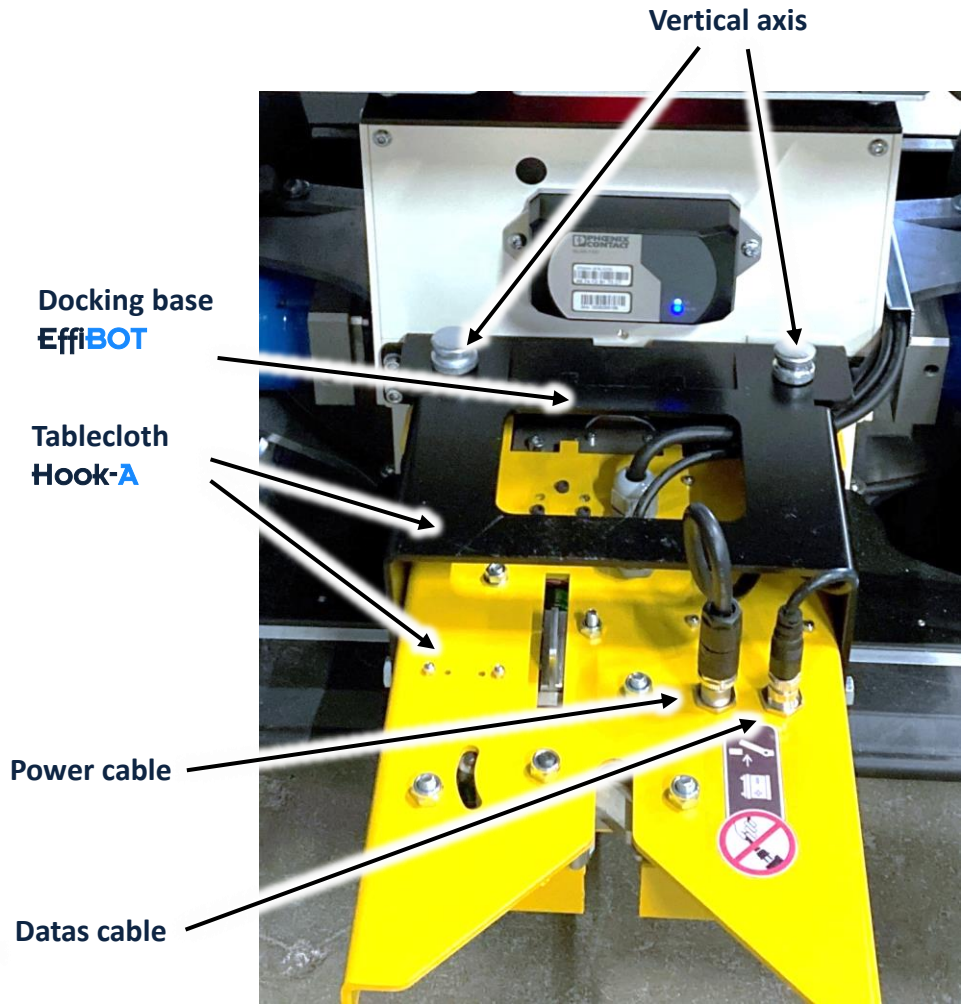
The Hook-A accessory

- Hook-A is an accessory that is installed on the end of the EffiBOT. The robot must have the hitch option (*black docking base*).
- Insert the Hook-A chain into the EffiBOT docking base and lock the assembly with 2 vertical pins.
- Connect the power cable and data cable to the EffiBOT's side sockets.



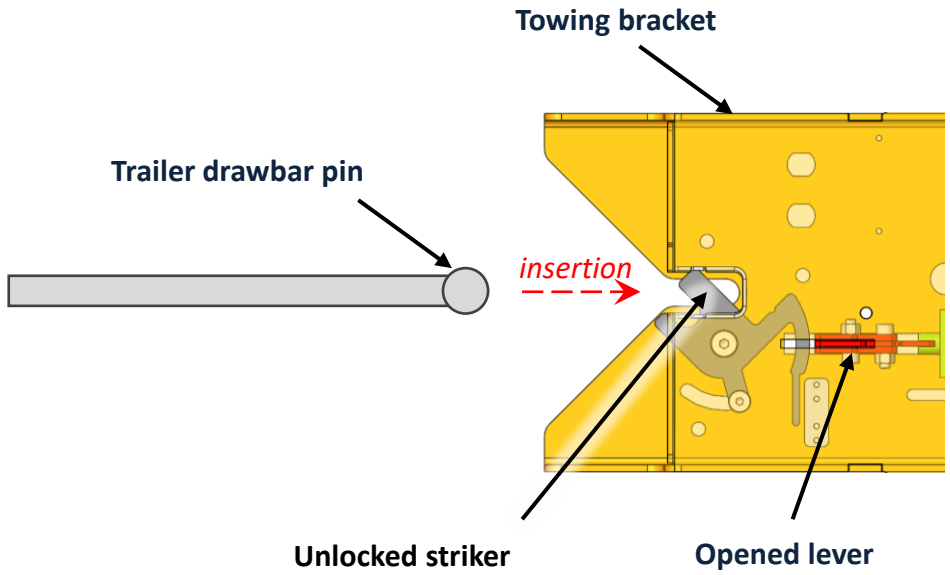


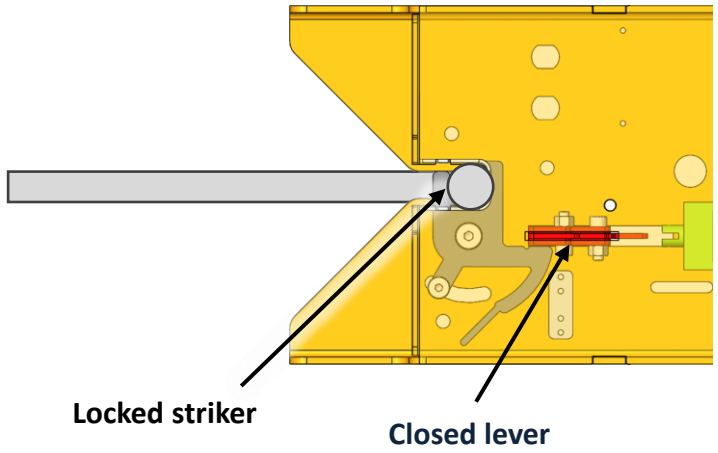
The Hook-A accessory

- The drawbar of the trailer must have a vertical axis and be manually inserted into the Hook-A hook.
- EffiBOT is ready to move, either **autonomously** or in Follow-Me, followed by its trailer.
- The trailer can be uncoupled automatically by the EffiBOT either from predefined positions in the mapping software or from an order received by the fleet server.
- The trailer can also be uncoupled **manually** by operating a lever.

Illustrated functioning

- Manually place your trailer tongue pin into the **towing bracket**.
- The Hook-A **automatic striker** hooks and locks your trailer tongue pin.
- Once EffiBOT has reached its release zone, it will unlock to release the trailer pin.
- A **manual release** is available by activating the lever. This lever, when closed, blocks the striker to **lock it**. When open, it releases the striker to **unlock it**.

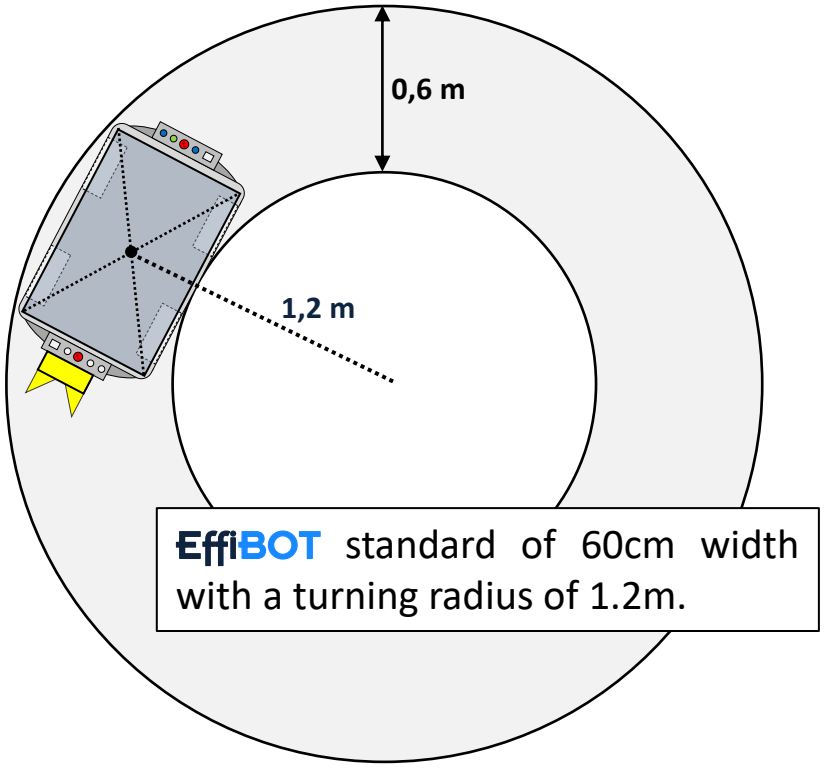




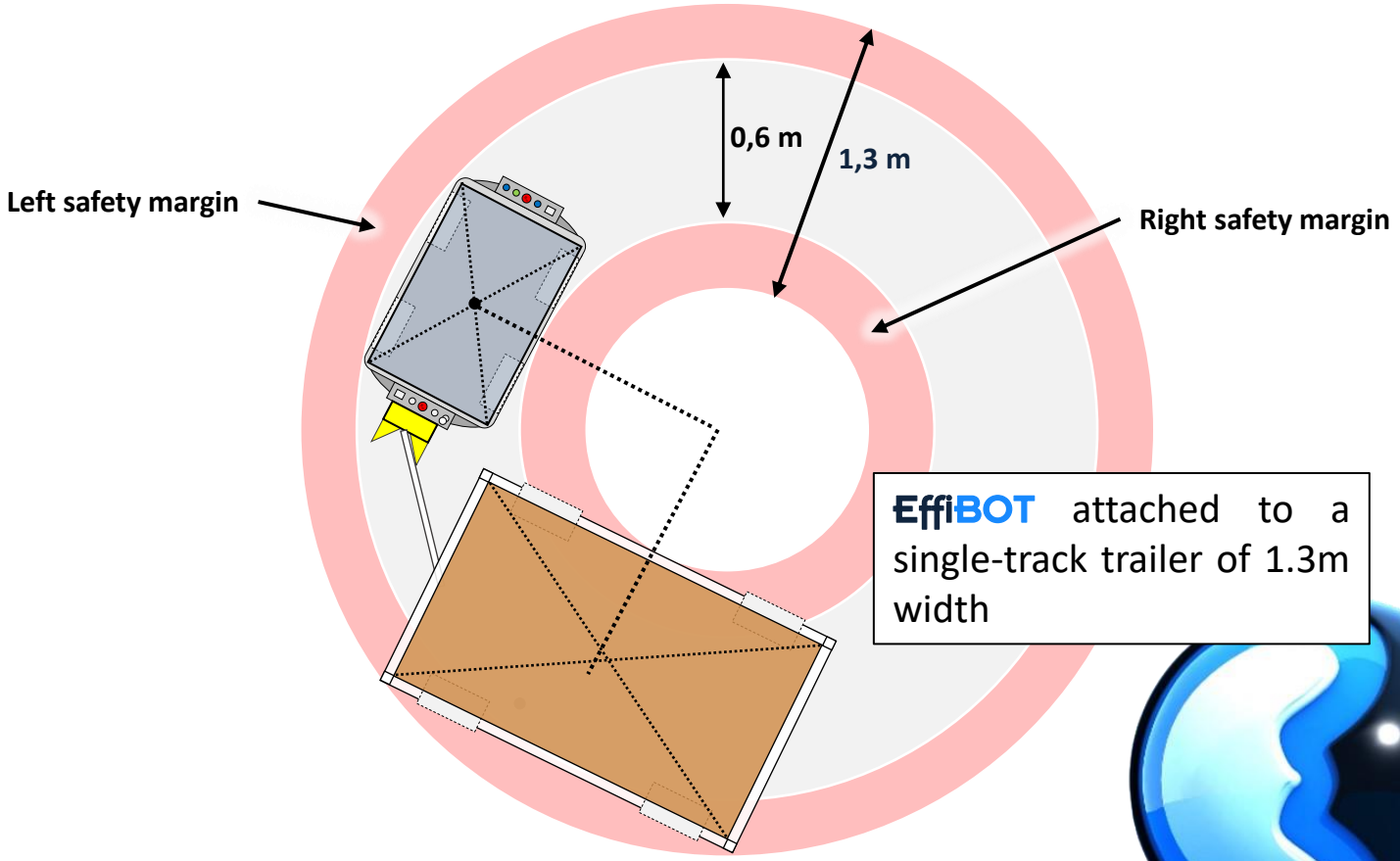
Cinematics, size and obstacles

- The trailer towed by EffiBOT is not equipped with an obstacle sensor. It is therefore up to the EffiBOT robot to ensure that there are no obstacles around it that could be hit by the trailer it is towing.

- Also, when a **trailer is attached**, the width of the EffiBOT is **virtually increased** on the left and right by a safety margin.



EffiBOT standard of 60cm width with a turning radius of 1.2m.



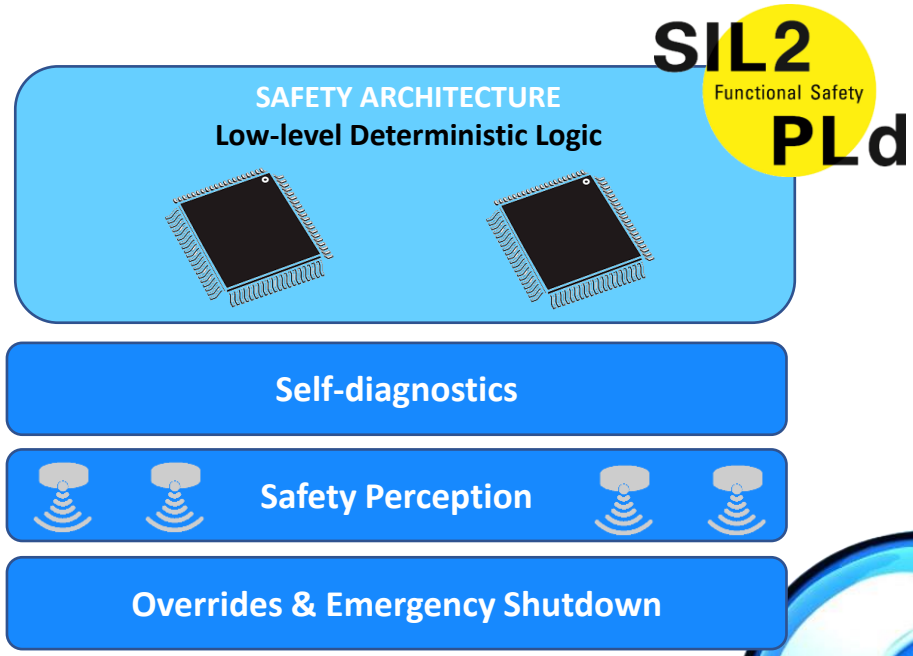
EffiBOT attached to a single-track trailer of 1.3m width

Safety first architecture

- The Hook-A electronic system has been designed according to **ISO 13849**: "Safety-related parts of control systems". It is a Category 2 safety architecture with a **SIL2 / PLd performance level**.
- This electronic system prevents the EffiBOT from moving until the lock is fully locked or unlocked. When the EffiBOT is moved, it ensures that the strike plate remains stationary.

- When a trailer is attached, the dimensions of one and only one previously stored trailer are transmitted to the EffiBOT for obstacle management.

  - ✓ Redundant microcontrollers (main channel and test channel)
  - ✓ Redundant inverted logic sensors for opening hook pairs
  - ✓ Redundant inverted logic sensors for closing the hook pairs
  - ✓ Redundant inverted logic emergency stop outputs connected to the motors' STO (Safe Torque Off) input



Hook-A & EffiBOT, configuration

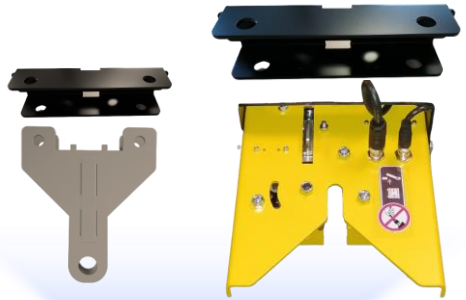
- Our **Hook-A** system is compatible with our **Shaped Trailers** range of trailers. It can also be on yours, depending on its characteristics!

FlatShape

C-Shape

Effidence

Intelligence for mobile robotics



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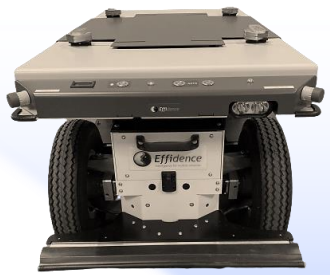

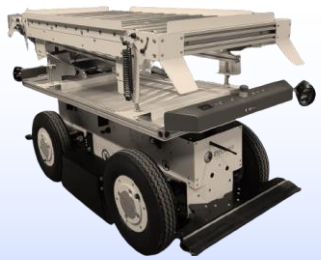

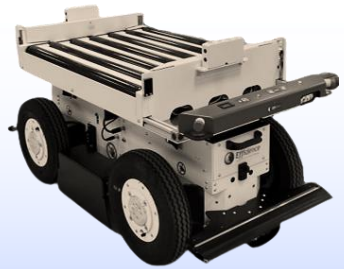

Hook-A