



Smart Ports



REQUIREMENTS



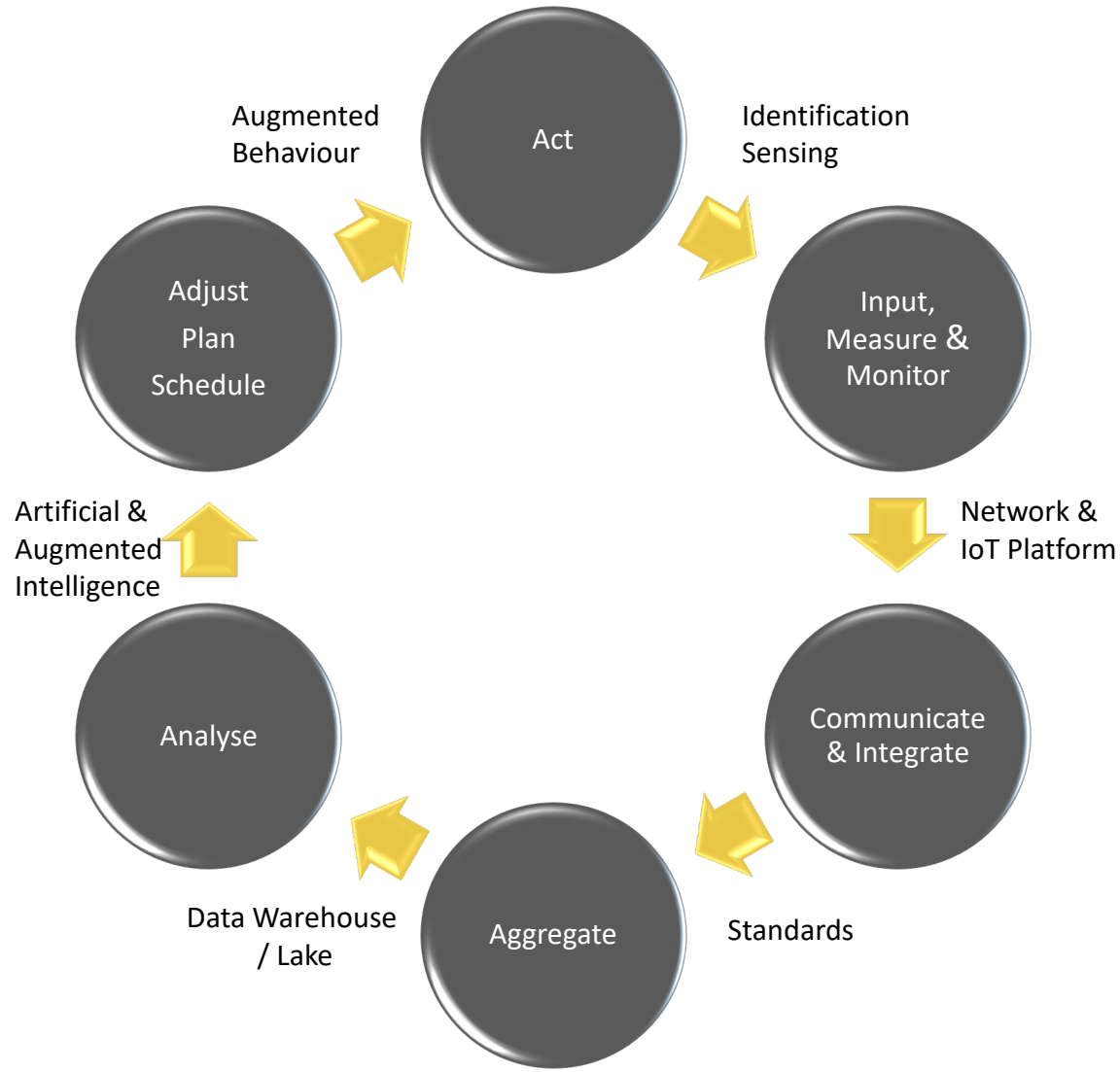
The move towards a digital economy requires industry to transform themselves to become more data and insight-driven. The port industry is no exception. There are three main challenges driving the need for smart ports:

1. Operational excellence
 - Velocity
 - Risk
 - Turnaround
2. Migrating activities (challenging external market)
3. New business opportunities

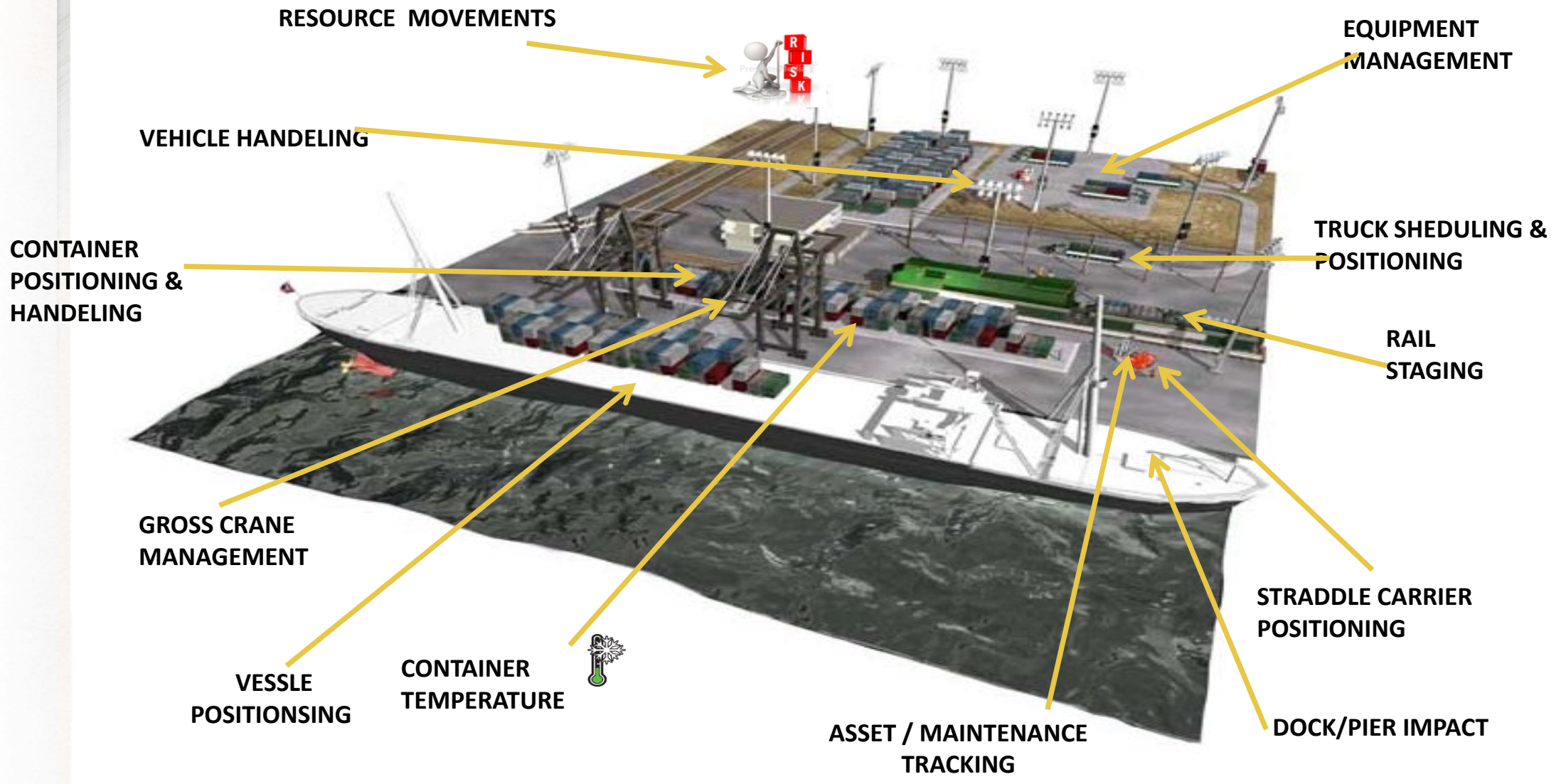
IoT VALUE CYCLE



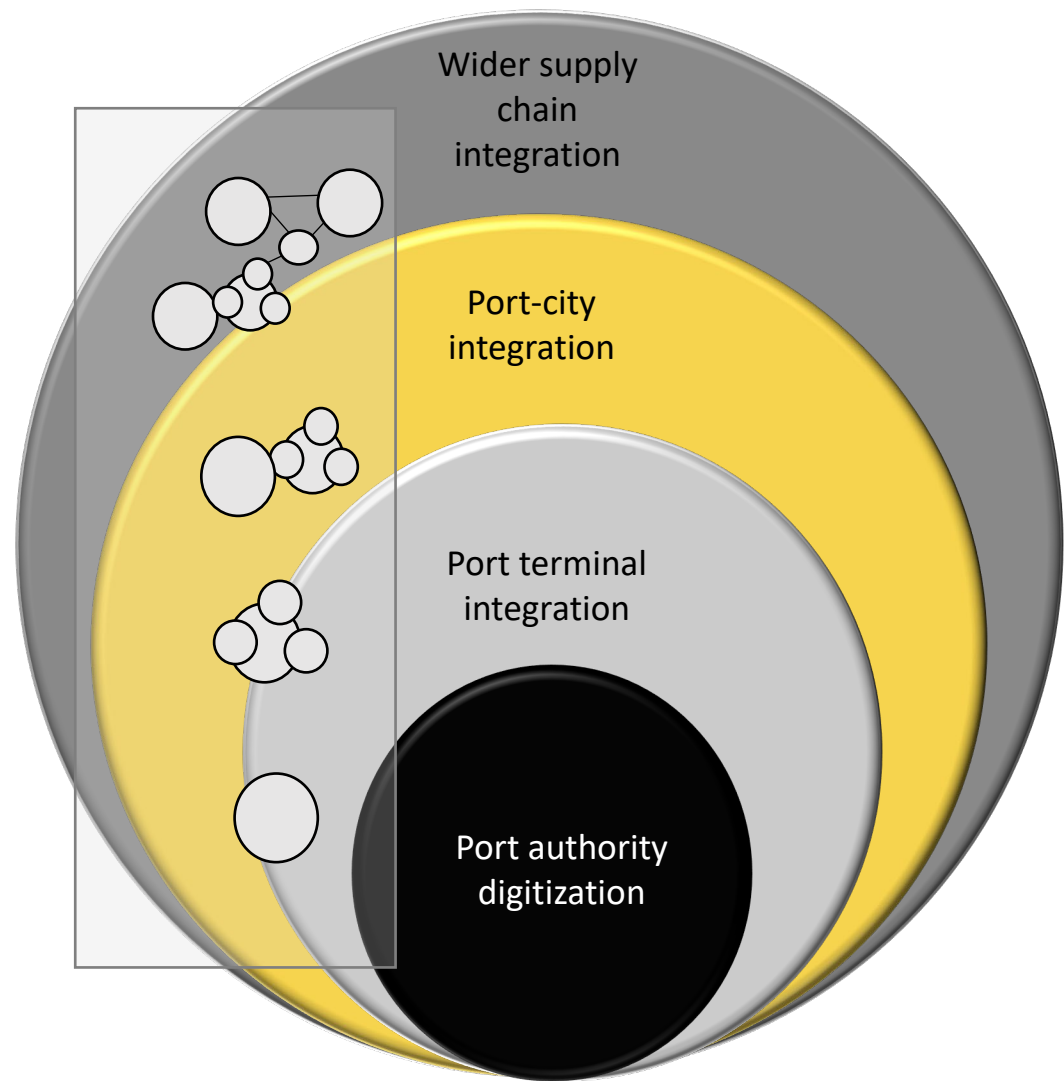
Artificial Intelligence depends on data



PORT APPLICATIONS

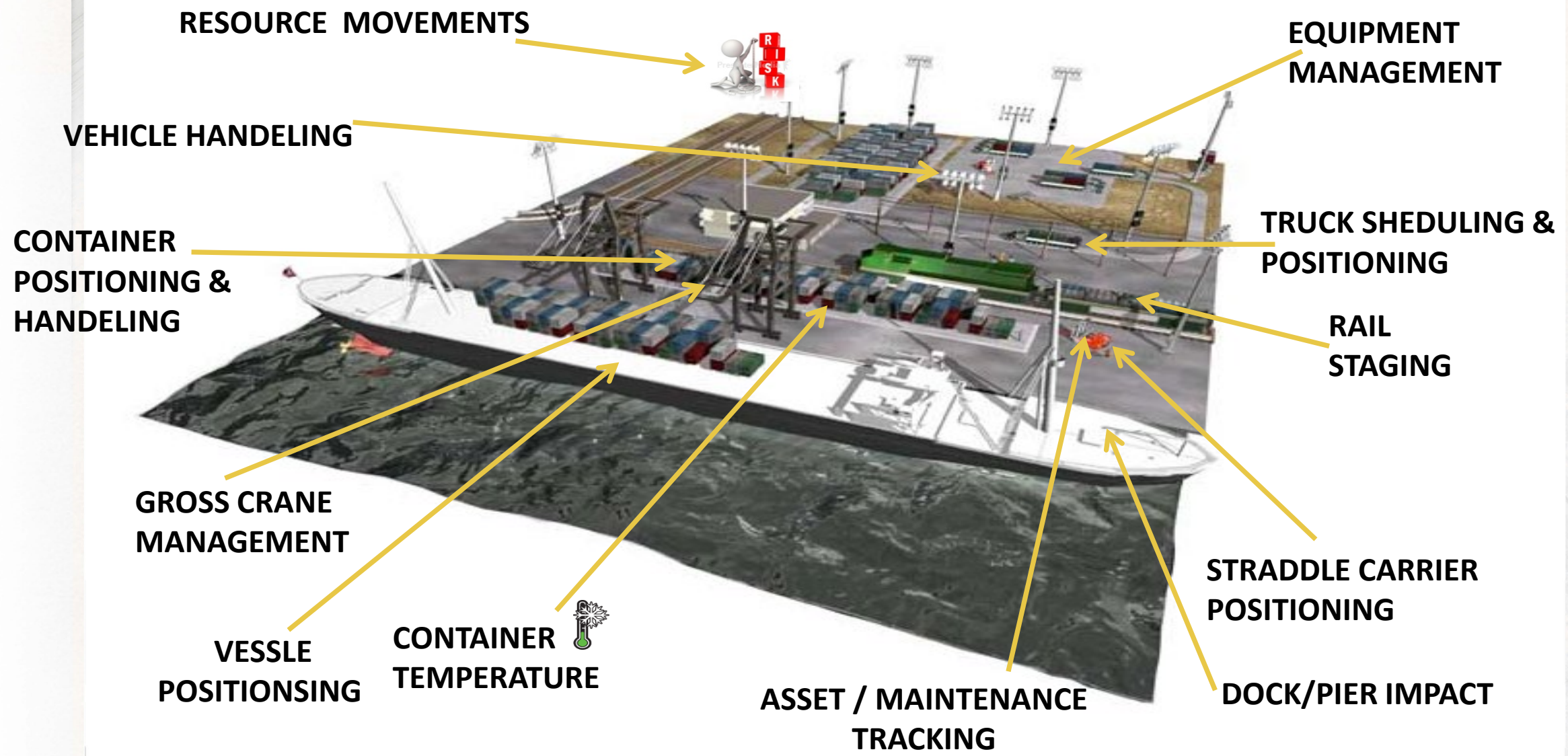


INTEGRATION REQUIREMENTS





PORT APPLICATIONS



EXAMPLES OF WHAT CAN BE ACHIEVED

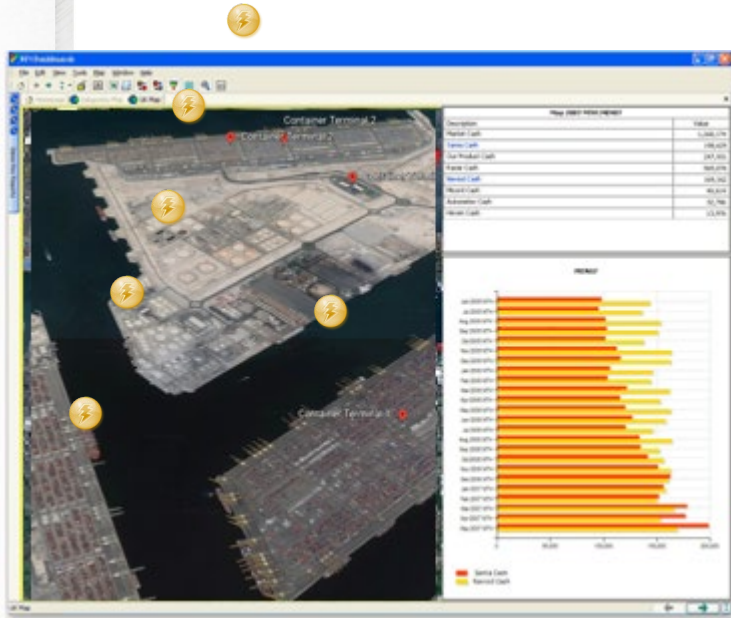


- Truck scheduling and positioning
- Staff Management
- Asset & Equipment Management
- Container Tracking and Protection
- Car Terminal Management
- Warehouse Stock Management

TRUCK SCHEDULING & POSITIONING

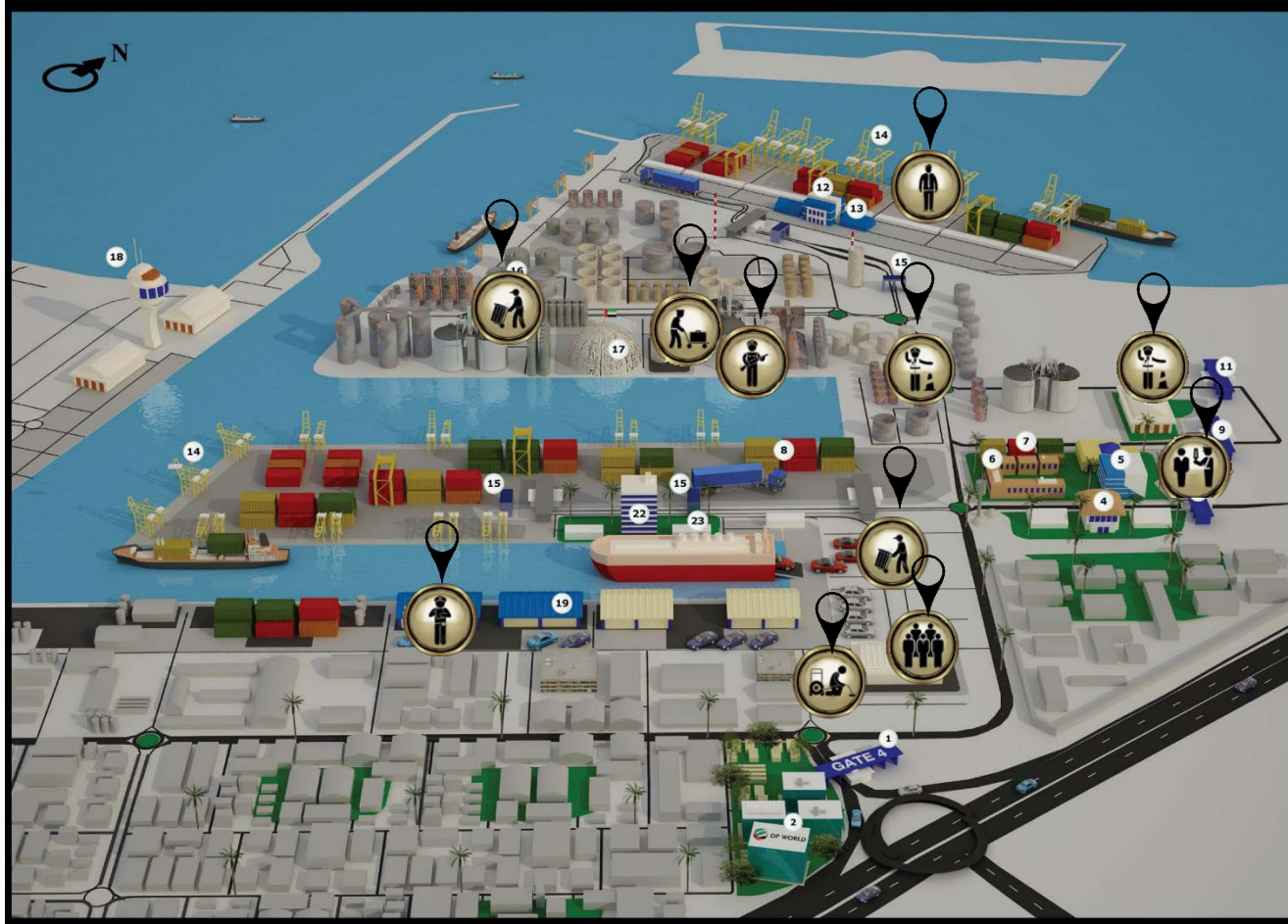


1. Auto gate arrival notification
2. Direct truck to correct area
3. Truck positioning
4. Truck lane arrival
5. Direct truck to correct lane
6. Truck lane departure
7. Truck lane turnaround times
8. Truck Auto gate departure
9. Truck port turnaround times



1. Management software monitors the sensors and updaters and display statuses on a operational dashboard.
2. Sensor data can be integrated via web services.
3. Provide truck statuses to the trucking companies via web interface.
4. Identify and alert operations of truck excessive long turnaround time.
5. Identify and alert operations of bottlenecks
6. Analytics and dashboards for quick reporting

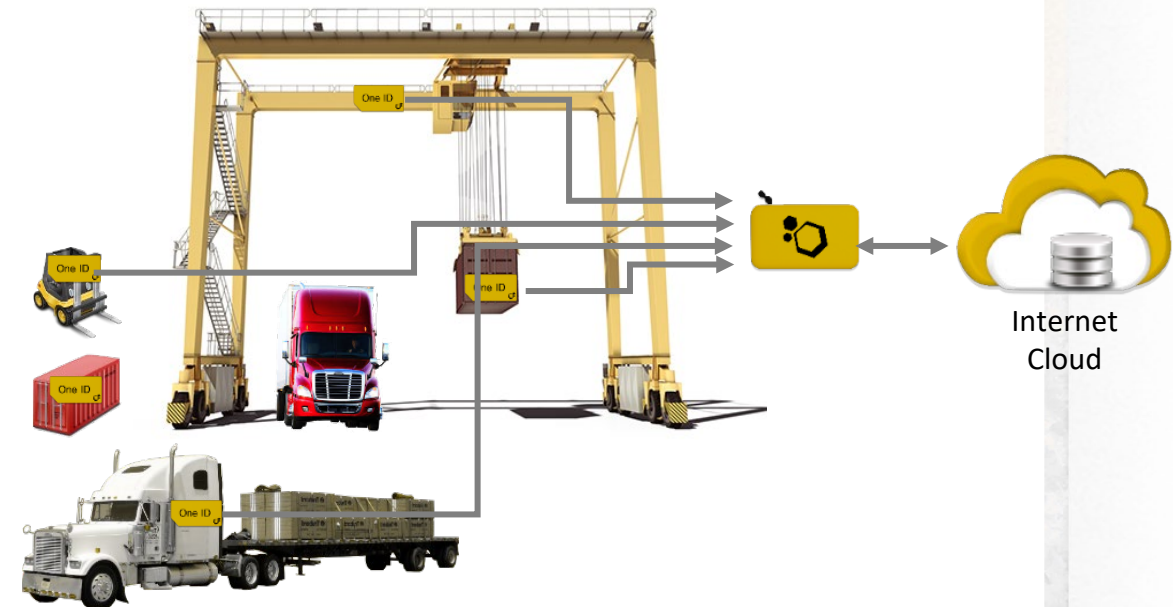
STAFF MANAGEMENT WITH HIVE ONE ID™



- Hive One Id™ can be used to not only manage employees but also security and contract staff. Hive One Id™ can track employees, making it easy to find them on the premises. It can also report on where staff spends time.
- One ID can manage access to zones.
- It can also record time management which can also be integrated to a payroll.
- Staff ID's use the same Hive IM™ infrastructure.



- Hiving Technology is ideal for asset management. As soon as the asset (tagged with a Hive One Id™) is moved, the asset register will automatically be updated, making it easy to locate assets and equipment.
- Hive One Id™ can be configured to transmit its ID at any specified interval and will be monitored by the Hive IM™ placed in the zone where the assets are located. The data is automatically updated to a central database.
- Hive One Id™ is equipped with tamper-proof detection and an alarm will be triggered in case of any tampering.
- Hive One Id™ can also be used to track equipment that is regularly taken off site such as company laptops.
- Hive One Id™ is ideal to track assets through service & repairs.
- All reporting is based on live real-time information.

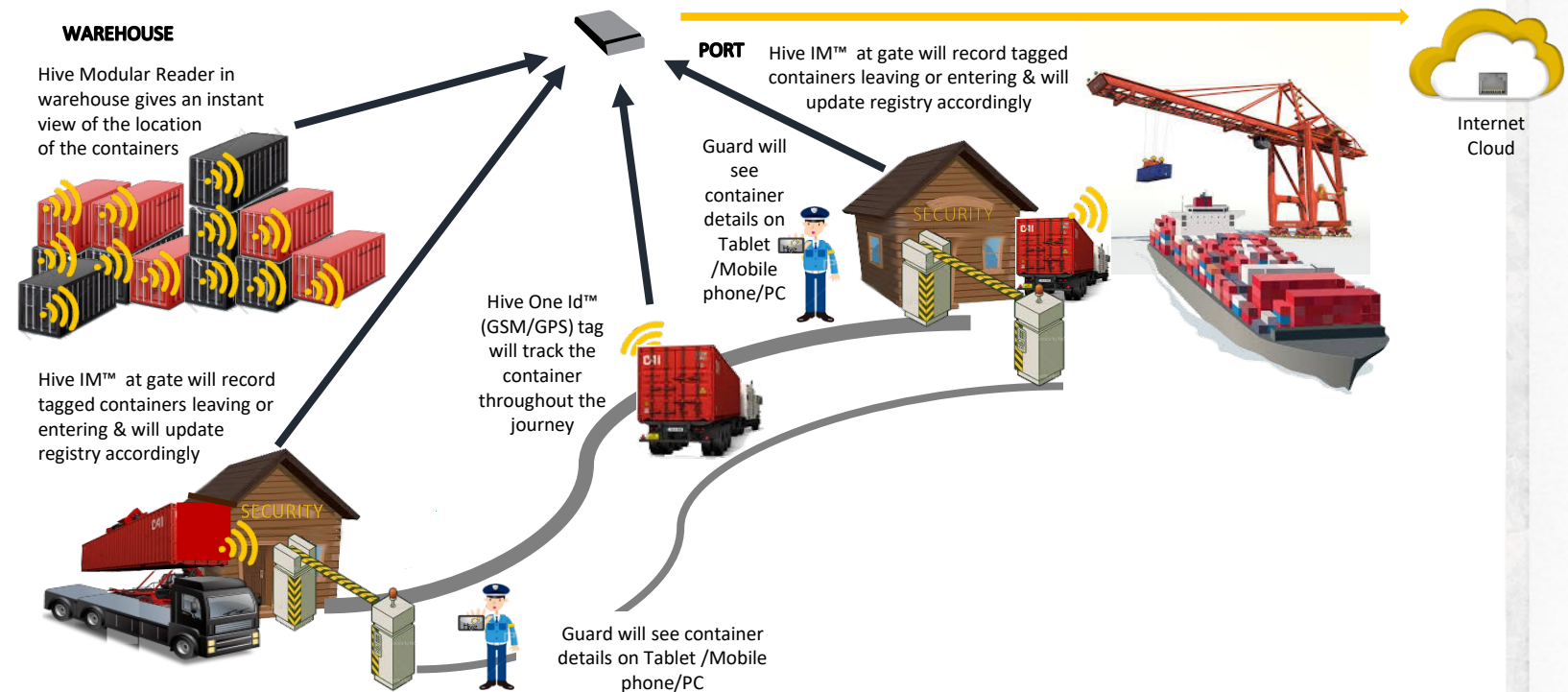


CONTAINER TRACKING & PROTECTION



- Hive One Id™ is ideal for the container tracking process as Hive One Id™ tags can be attached to a container at any stage of the process, improving supply chain operations and streamlining logistic processes.
- Hive One Id™ can be used to track containers in a depot/warehouse. Precise, real-time coordinates ensures a clear view of all containers, making sure that the correct containers are loaded.

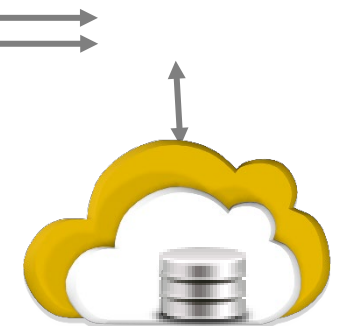
- Hive One Id™ is durable, tamperproof, waterproof and is IP65 certified.
- Suitable to monitor containers globally in one place giving operators and logistic companies data about the whereabouts of a container in real-time.



SPECIALISED CAR TERMINAL MANAGEMENT



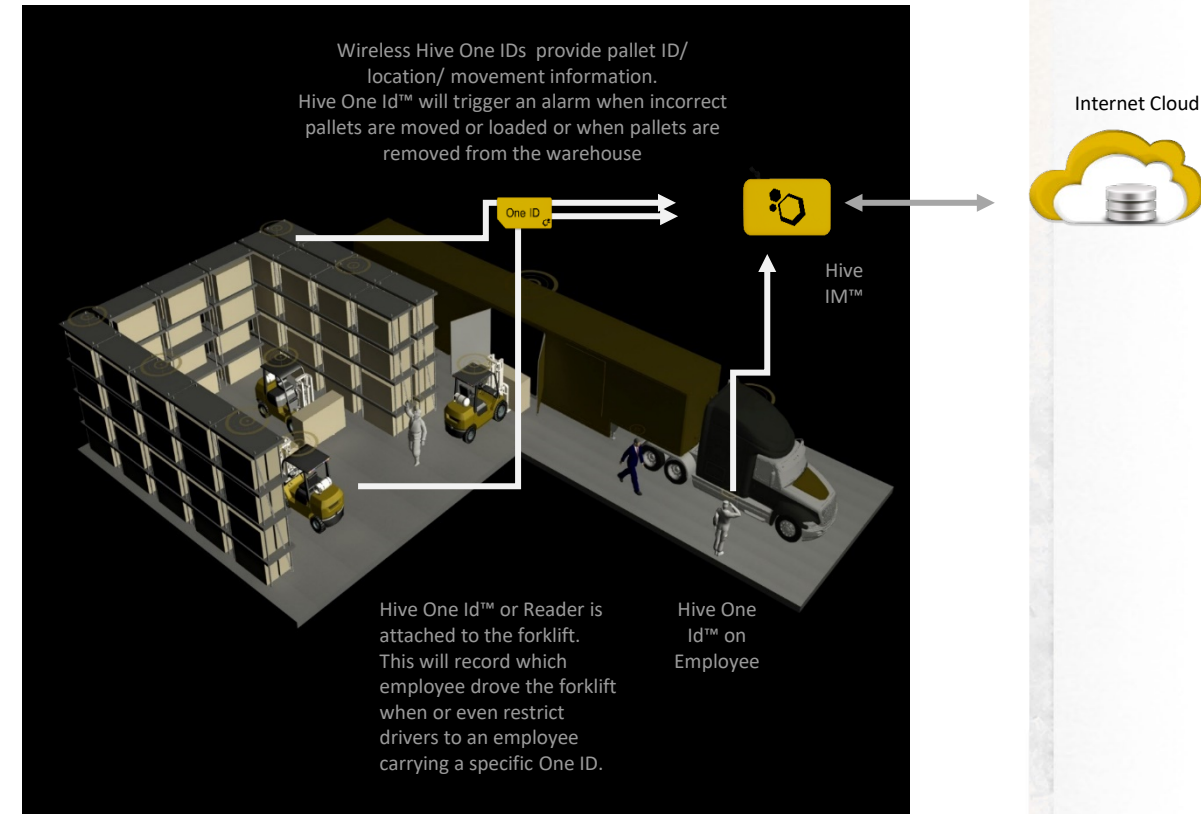
- Hive One Id™ is ideal for automated asset management. As soon as the asset is moved, the register will automatically be updated.
- Vehicle make, model, colour, registration number, parking-bay details can be associated with each individual Hive One Id™.
- Hive One Id™ delivers a cost-effective and reliable solution for monitoring movable assets. It also provides instant visibility to assets entering & exiting the depot, as well as identifying where the assets are located at any given time thus reducing paper trails.
- Hive One Ids include on-board memory for monitoring & storing information about the asset or vehicle with multiple levels of security.
- The Hive One Id™ System will also:
 - Prevent unauthorised usage of stock vehicles.
 - Provide more accurate storage information.
 - Improved supply chain operations including speedy order fulfilment.



Hive One Id™ transfers location & status to the Hive One Id™ Reader



- Hive One Id™ is ideal to identify and track pallets in a warehouse environment, allowing for the seamless management of warehouse stock whilst improving supply chain operations.
- Hive One Id™ can assist in :
 - Identifying and tracking of pallets, knowing at any time what pallets are in the warehouse.
 - Improving the ability to find the required pallet/ item and ensure that the correct pallet is loaded.
 - Alarm is triggered when incorrect pallets are moved or loaded.
 - Efficient and timeous fulfillment of orders.
- Forklifts & personnel can be equipped with Hive One Id™ monitors to identify exactly which pallet was loaded to which vehicle and by whom.





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