



DRONE INVENTORY
SOLUTION FOR WAREHOUSES

WHY DRONE INVENTORY?

Traditional manual methods of inventory counts have some limitations and risks:



Take long time (up to 3 days) and therefore cause halt in operations and losses in frozen stocks



Require compliance with the conditions for high-altitude work



Lead to excess costs of staff and rental of lifting equipment



Dangerous due to working in high altitudes



Error prone and inaccurate due to «human factor»

SOLUTION IN DRONES



FAST: stock taking in 1 hour
(10 000 pallets)



SAFE: free of high-altitude work and
usage of heavy equipment



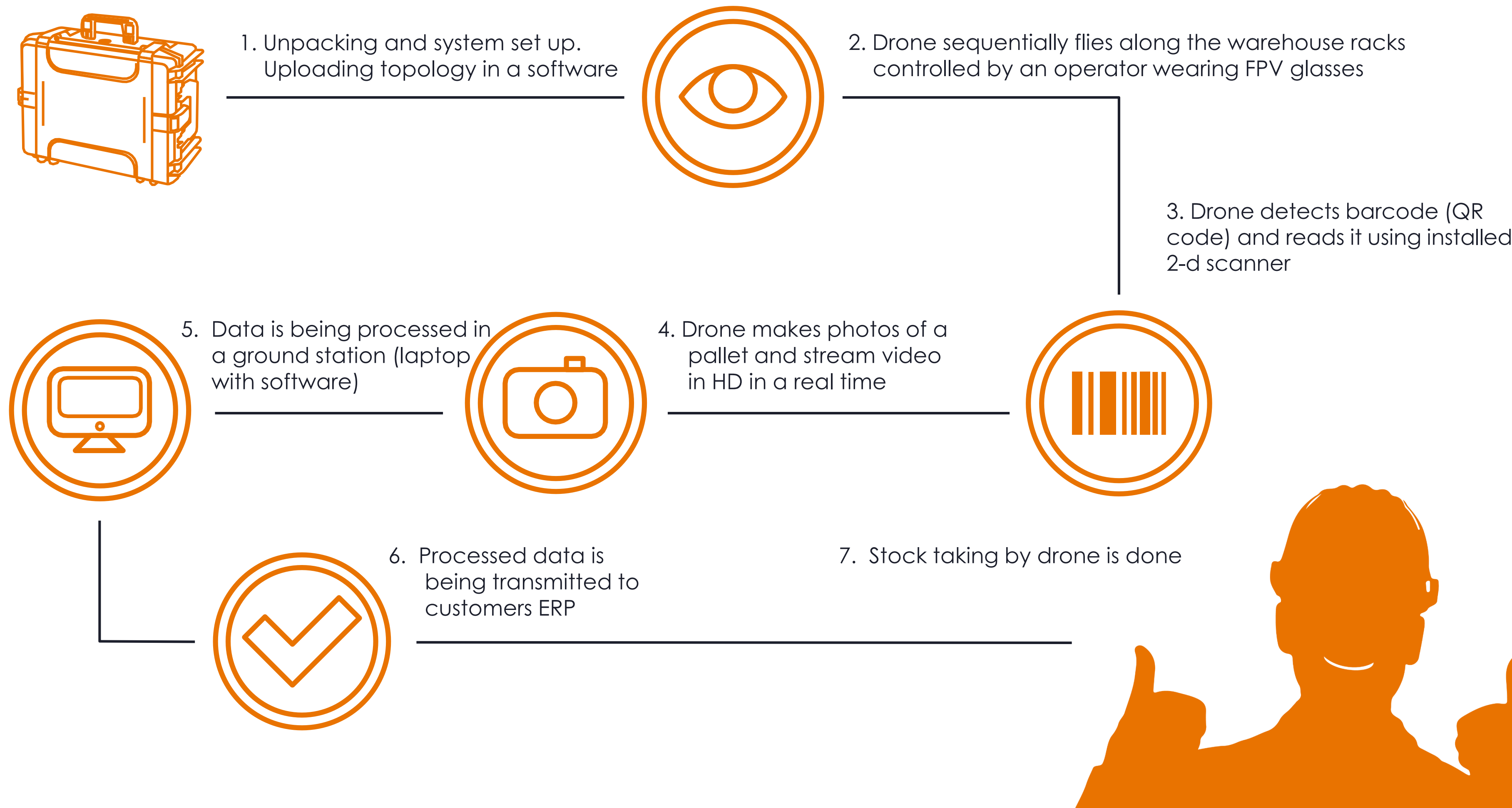
FLEXIBLE: free & controlled movement at any
height



DIGITAL: integration with customers ERP or
customized reports in XML



HOW IT WORKS?



DRONE SET-UP

The design of our drone is made to fit industry requirements and clients expectations. It can scan, make images or transmit video in HD quality.

1. Propellers set

Provides optimal level of power, performance and endurance

2. Accumulator (Li-Ion)

Provides 30 minutes in a flight mode. Battery can be easily replaced by an operator.

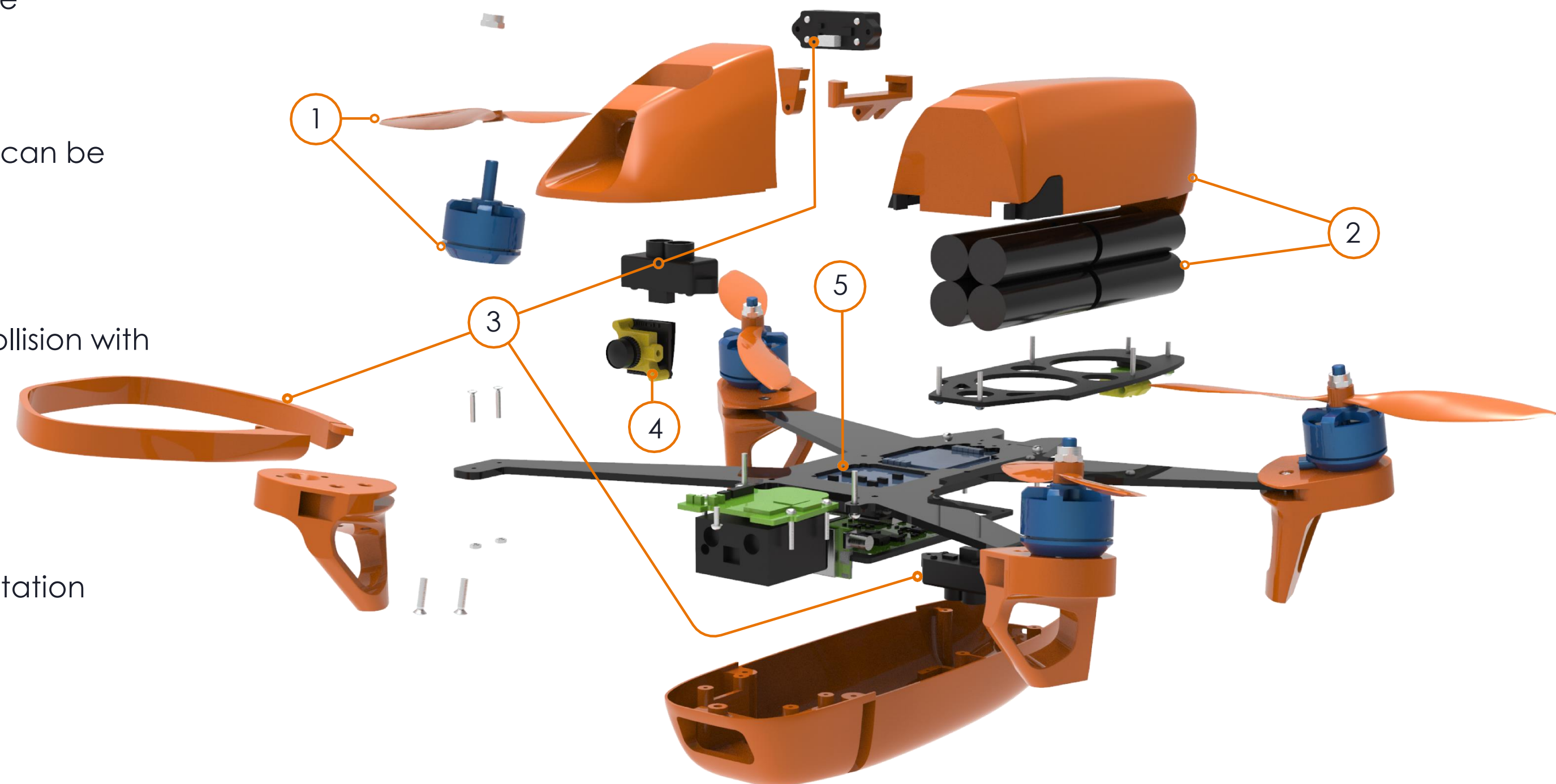
3. Anti collision system

Lidars alert operator and prevent possible collision with objects

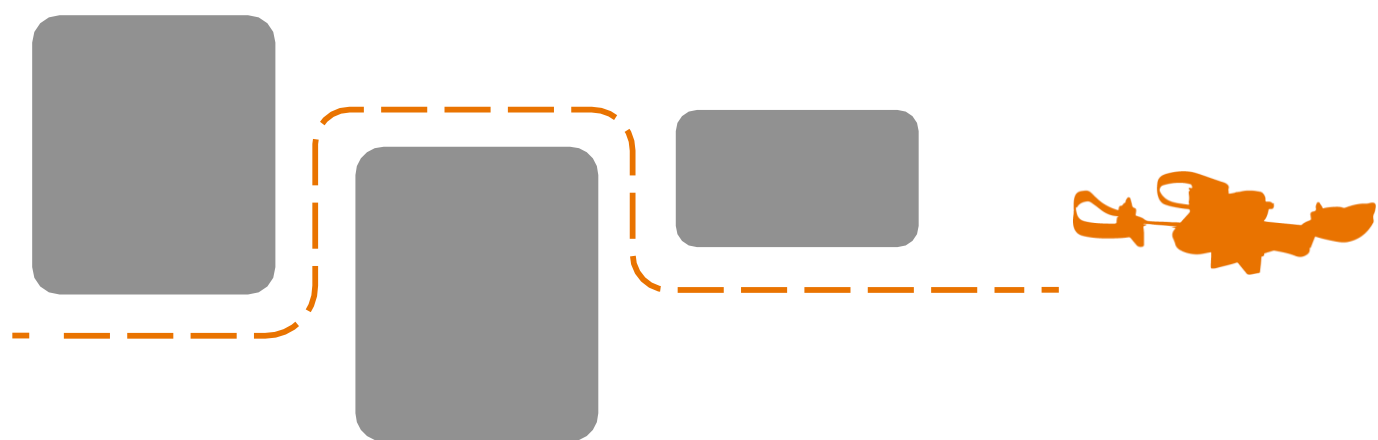
4. Camera

5. «Smart» electronics

Scan, process and transmit data to ground station



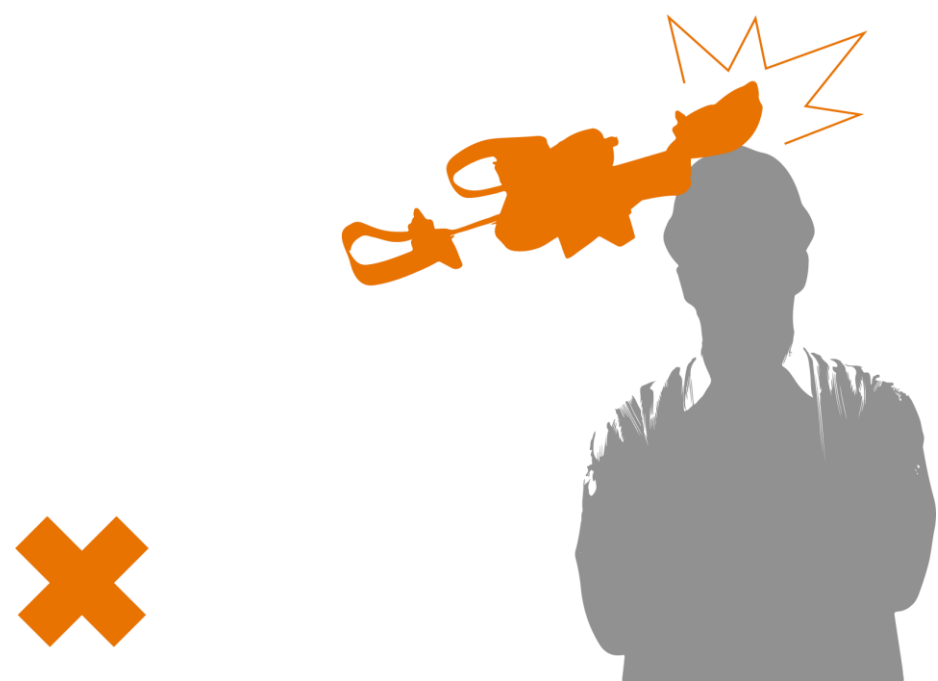
OPERATIONAL SAFETY



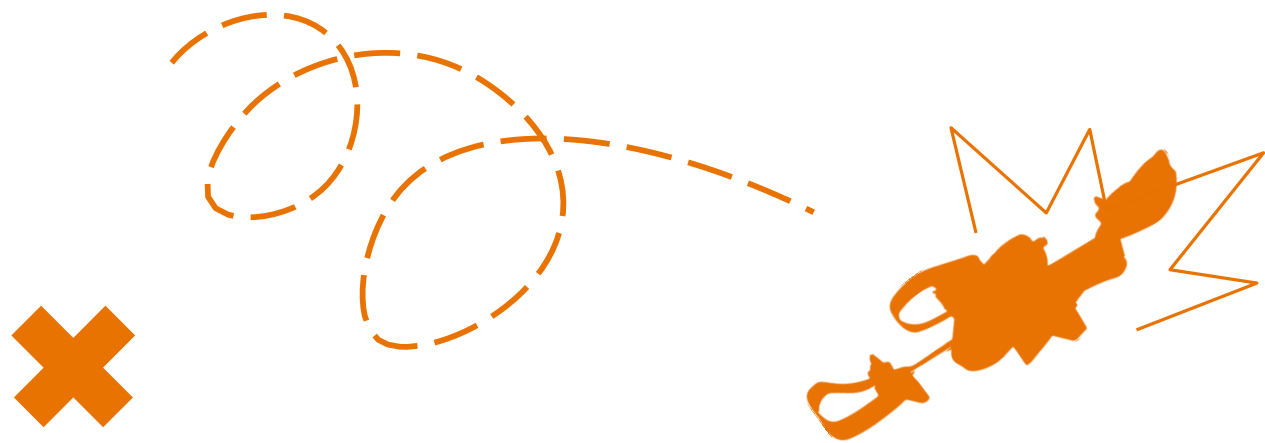
3D camera for precise navigation and positioning



Bumpers and lidars protect drone from collision with pallets or warehouse racks



Altitude retention system with lidars



Soft landing in case of low battery or any emergency situations

VALUE PROPOSITION

	Parameter	<i>UVL Robotics</i>	Traditional methods
✓	Speed per scan	<i>5 sec</i>	> 20 sec
✓	Cost per scan	<i>from \$0,3</i>	comparable
✓	Losses in profit + frozen stocks	<i>no</i>	yes
✓	Accuracy	<i>100%</i>	95%
✓	Human factor	<i>no</i>	yes

BUSINESS MODEL

Service:

- Inventory service, including system integration and configuration
- Subscription fee for set of inventories in calendar year
- Additional fee for photo-taking and HD-streaming

Payment type:

Fixed cost per one pallet (incl. empty storage units)

Current status

40 successful inventories

30 sets ready for service

20 customers

Coverage:

Russia, Kazakhstan, Belarus, Ukraine, Turkey

OUR CLIENTS

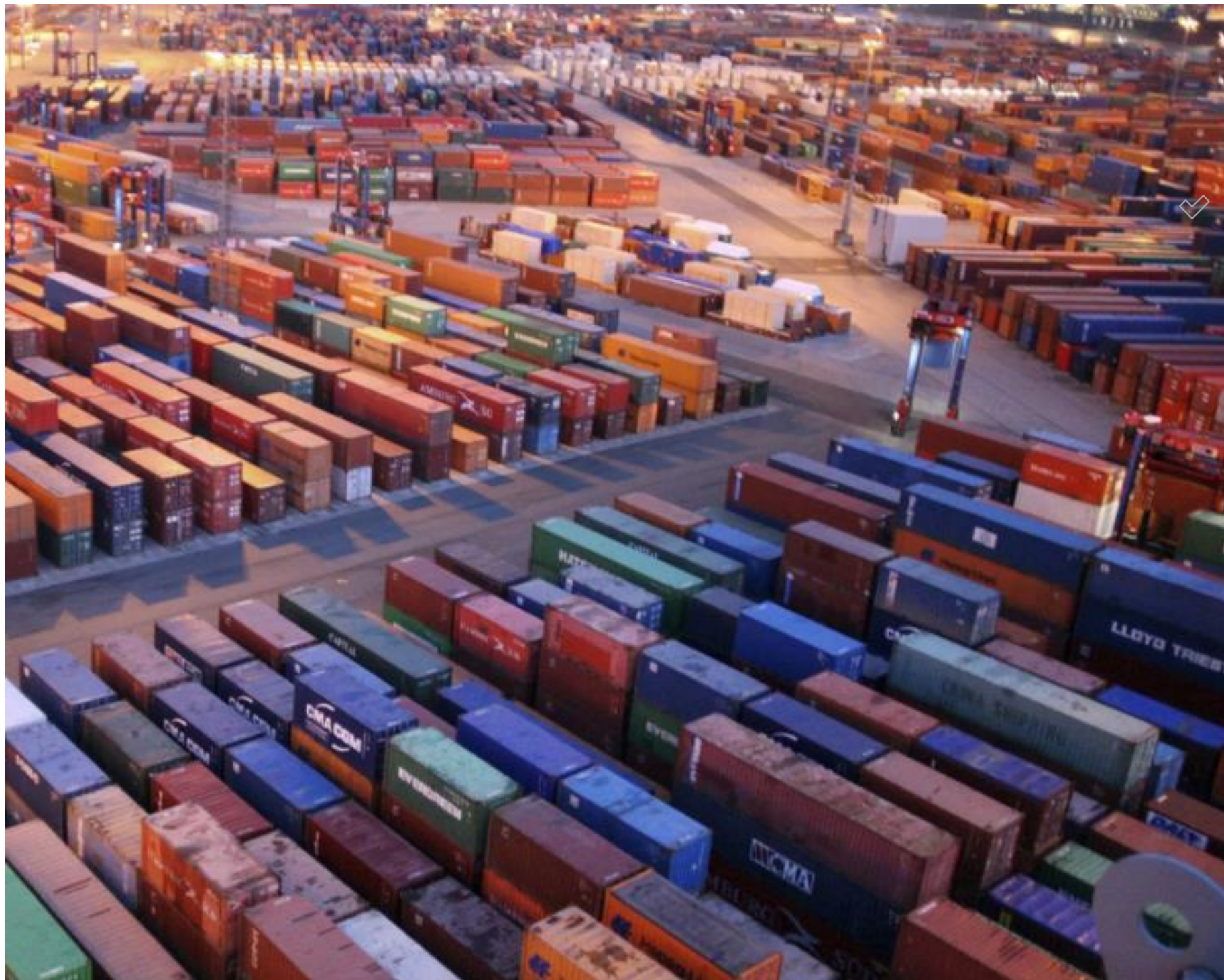


PERSPECTIVE SOLUTION – PIPE INVENTORY

The drone flies around the storage area on a regular basis. The computer vision system measures the actual size of the pipes in the stack, checking against the data of the accounting system. The software system recalculates the pipes in storage. Computer vision reveals the primary signs of defects caused by violations of storage conditions.



PERSPECTIVE SOLUTION – INVENTORY OF CONTAINERS



(!) Inspection by personnel:

- Inspection takes a long time
- Search for a "lost" container - a lengthy procedure
- There is a risk of incorrect reading of the container identifier - the "human factor"

An autonomous drone equipped with computer vision systems identifies the container number and also makes an image that records external damage



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