EXPONENT
TECHNOLOGY SERVICES

SOLUTION BRIEF

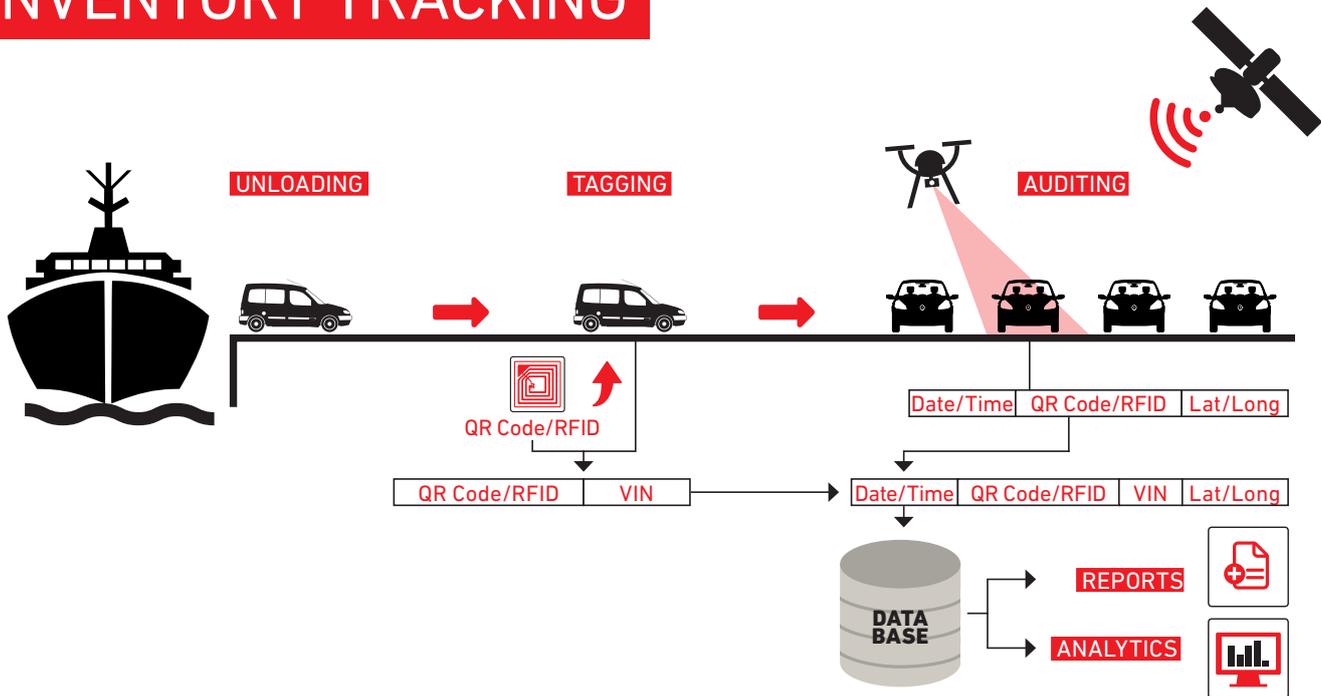# UNMANNED AERIAL SYSTEM (UAS)-BASED

THE CHALLENGE

Car manufacturers and distributors face challenges when receiving vehicles at seaports or when shipping from storage yards prior to distribution. The supply chain is required to keep track of thousands of cars (or any assets on site) at any one time and current inventory tracking procedures are archaic and require hours of labor. With no universal or international standards in place, employees must manually check in thousands of assets, which is time consuming and can lead to inaccurate inventory and location reports. Additionally, the longer assets stay in storage yards, the more likely they are to get damaged by being moved around during the inventory and locating process. Port operators, vehicle manufacturers and asset managers in many industries need a solution that delivers real-time asset data to ensure an efficient supply chain.

THE SOLUTION

Exponent Technology Services has designed a customized UAS-based asset tracking solution that works to improve the entire supply chain for all high valued assets. Exponent's solution uses RFID readers attached to a UAS which is flown over the entire storage yard, collecting information on all of the assets. This solution ensures inventory accuracy, increases speed and efficiency and eliminates costly human errors. By automating this process, customers can eliminate lost and "out of stock" events which can generate late charges and lost sales. The UAS is also fitted with a proprietary "flight recorder" that transmits data to customers seamlessly and is easily integrated into existing inventory systems. This allows users to receive up-to-date asset tracking information at the click of a button, improving the entire efficiency of the supply chain and ensuring that assets come in and out of the storage yard in a timely basis.

UAS-BASED ASSET INVENTORY TRACKING

UNLOADING TAGGING AUDITING

QR Code/RFID

QR Code/RFID	VIN

Date/Time	QR Code/RFID	Lat/Long

Date/Time	QR Code/RFID	VIN	Lat/Long

DATA BASE

REPORTS

ANALYTICS

THE TECHNOLOGY

UAS CUSTOMIZED HARDWARE

BRING THE SENSORS TO THE ASSETS

UAS-based solution that allows the sensor to go to the asset, instead of having to bring the asset to the sensor. No need for fixed readers or handhelds to do inventory.

RFID READERS AND TAGS

EXPONENT'S PROPRIETARY RFID LOW-COST PASSIVE ASSET TAG

UAS fixed 3G transmittal allows assets to be tagged and read at a high rate, ensuring accurate inventory levels.

FULLY INTEGRATED SOFTWARE

PROPRIETARY SOFTWARE WORKS WITH UAS AND PAYLOADS

Cloud-based software designed specifically for use with the RFID reader and flight recorder, which integrates seamlessly with existing

FEATURE

Passive RFID-based tracking

Proprietary "Flight recorder"

Automated inventory collection process

Ability to schedule regular inventory collection processes

BENEFITS

Allows for pinpoint location of individual assets

Results in accurate inventory levels

Increases and improves delivery time

Improves time to dispatch (approximately 80%) and reduction in hours to find assets in the yard (approximately 95%)