

# Introduction to Thruvision Group plc

12 November 2019

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# Introducing Thruvision ...

## Passive Terahertz Technology for security screening of people

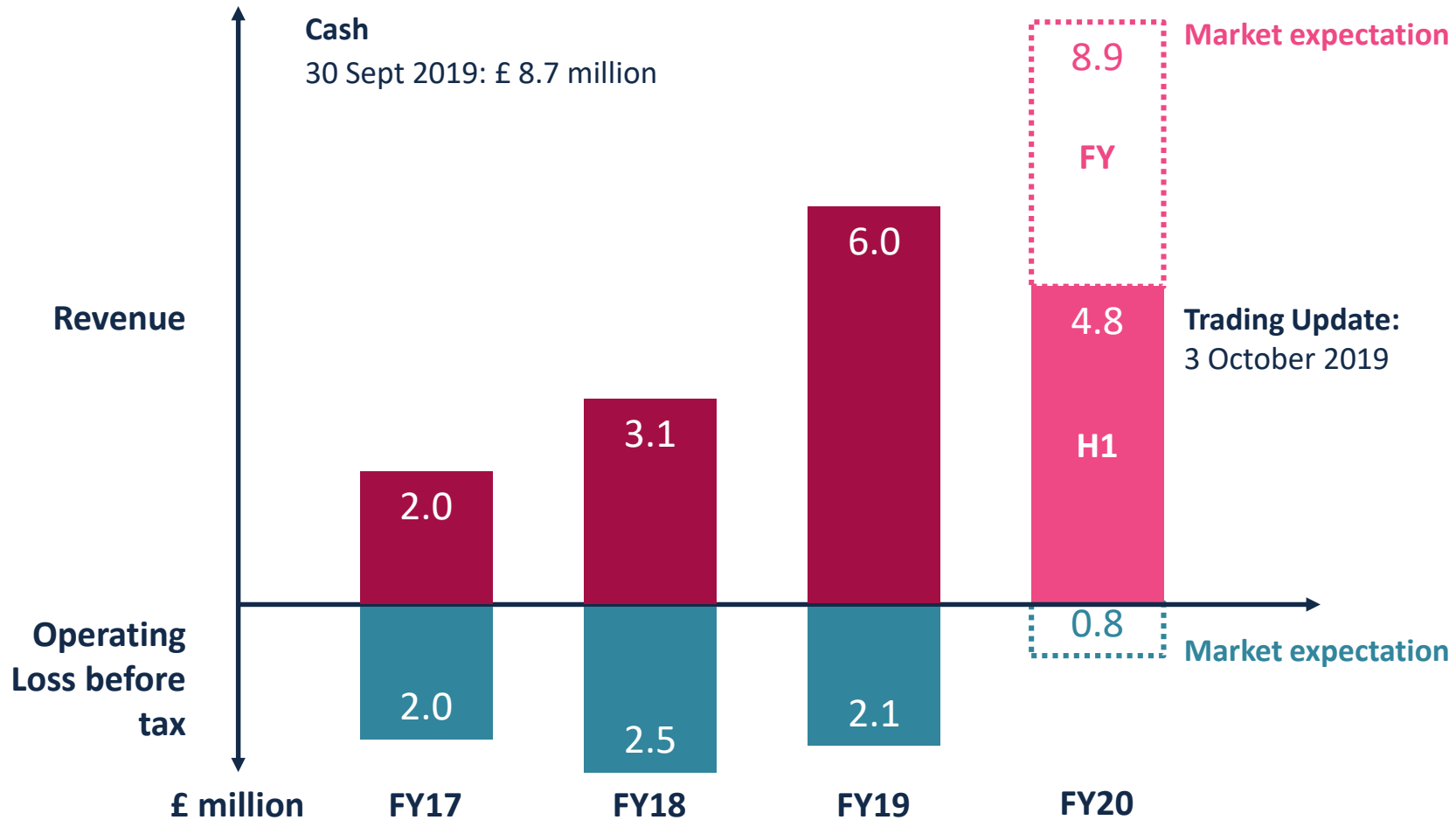
- ▼ **A new type of security technology**
  - Addresses growing need for high-throughput, effective people security screening
  - Detects weapons, explosives and contraband hidden under clothing
  - Works at distance
  - Completely safe and respectful
- ▼ **Operationally proven**
  - Growing list of government and commercial customers in 20 countries around the world
  - “Vetted and approved” by US Transportation Security Administration (“TSA”)
- ▼ **Market-leading, patented technology**
  - Originates from the UK’s prestigious Rutherford Appleton Laboratory in Oxfordshire
- ▼ **Growing business with strong cash position**



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# Headline financials ...

## Growing business with strong cash position



# A new type of security technology ...

Where does “Passive Terahertz Technology” fit in ?



Wavelength

120 mm

1.2 mm

0.01 mm

0.0005 mm

0.000001 mm

Technology type

Active

Passive

Passive

Passive

Active

Example

Airport scanner

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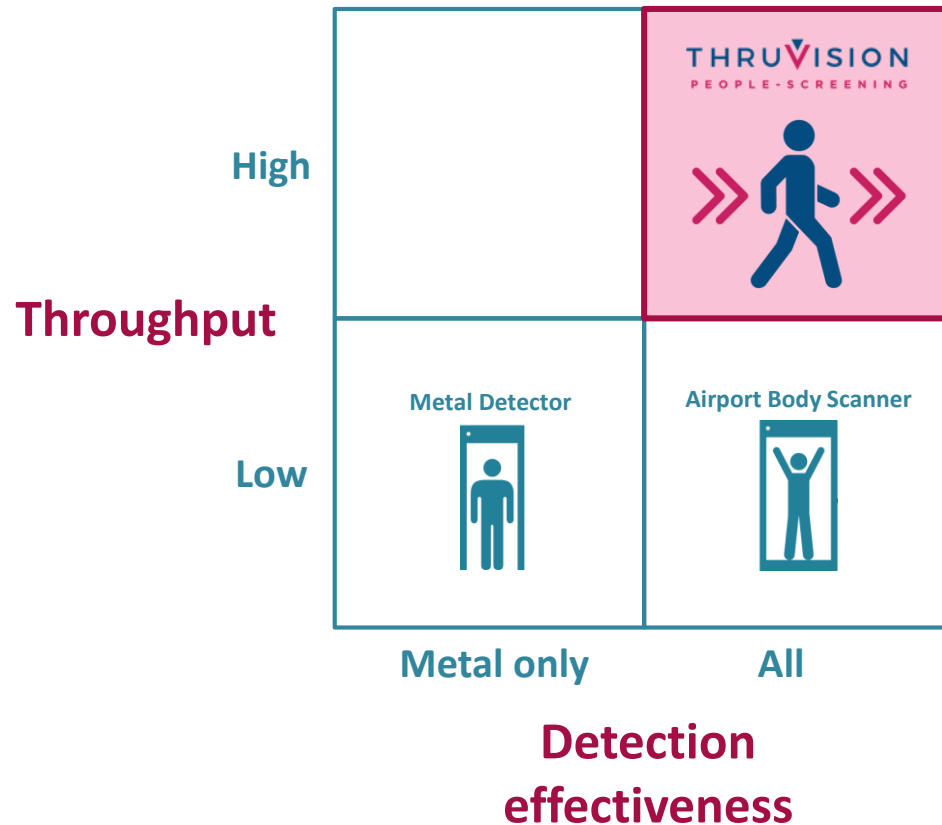
IR camera

Video camera

X-Ray scanner

# Addressing the need for fast, effective detection ...

Existing technologies have significant drawbacks in terms of throughput and detection effectiveness



## Why is Thruvision different ?

- ▼ No “divestment” of clothing or personal effects
- ▼ No “pat downs” as concealed item can be seen
- ▼ Can screen **moving people** as well as those who are stationary
- ▼ **Highly flexible** and easy to deploy

# Our five market segments ...

## CUSTOMS

Checking travellers for concealed contraband



## AVIATION

Deterring attacks to aircraft and airports



Potential market of many thousands of units per year

## LOSS PREVENTION

Reducing staff theft from warehouses by up to 80%



## MASS TRANSIT

Protecting travellers from terrorism



## ENTRANCES

Reducing queues while enhancing security



# Aviation ...

## Deterring terrorist attacks on aircraft and airports by passengers and employees

### Market characteristics

- ▼ Significant growth in air passenger numbers
- ▼ New faster bag scanning technology making people screening the bottleneck
- ▼ 'Insider' or employee threat seen as a growing risk

### Employee screening

- ▼ **Los Angeles World Airports** and **Seattle** are users with active pipeline of opportunity in the US

### Passenger screening

- ▼ Developing new specialised AI-based solution with **TSA's Innovation Task Force** <sup>1</sup>

### Airport concourse screening

- ▼ Delivered order to **Asian government** for airport concourse recently

LAX selected Thruvision to help manage 'Insider' threat



*"There remain serious vulnerabilities and gaps in employee screening at airports nationwide. Frighteningly, we have seen multiple examples of aviation workers with access to secure areas of airports being involved in serious criminal activities, including terror plotting, after being radicalized"*

**US Congressman John Katko, 2017**

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# Customs ...

## Screening travellers for prohibited items at Ports of Entry

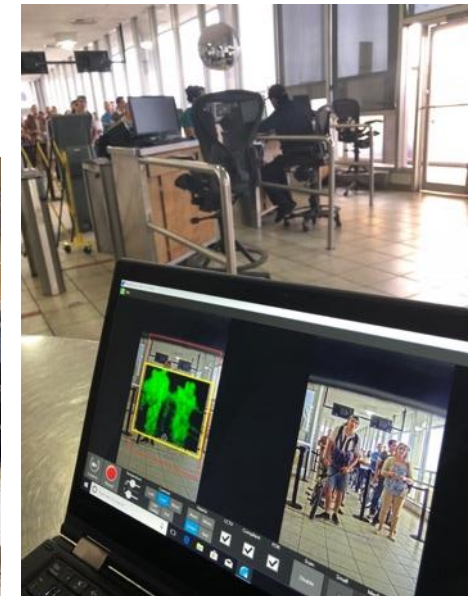
### Market characteristics

- ▼ National government agency customers, principally looking for cash, drugs and other contraband
- ▼ Politically important for many customs agencies, but long sales cycles

### Update

- ▼ Now have **eight** international Customs agencies using Thruvision
- ▼ Recent major award by **US Customs and Border Protection** now being piloted at several different land, air and sea “Ports of Entry”
- ▼ Received “Blanket Purchase Agreement” **from US State Department INL** in July 2019
- ▼ Also recent award from **Macau Customs** following fifth tranche of units ordered by **Hong Kong Customs** earlier in half

US State Department INL was Thruvision's sixth Customs Agency user



*“INL works to keep Americans safe at home by countering international crime, illegal drugs, and instability abroad”*

**Trialling with US authorities at El Paso, TX**

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# Loss Prevention ...

## Reducing staff theft at retail and logistics distribution centres (DCs)

### Market characteristics

- ▼ Many retail customers and each with a growing number of distribution centres
- ▼ Increasing problem given shift to online retailing

### Update

- ▼ Recent global retail industry research<sup>1</sup> estimates losses due to staff theft **averages 0.4% of turnover** meaning Thruvision delivers RoI in under 12 months
- ▼ Flagship customer list that includes **Boots, Hermes, JD Sports, Morrisons, Matalan, Next, Sony** and **The Hut Group**
- ▼ Focus on **Grocery, Apparel, Healthcare** and **Logistics** partners



Hermes now has a fleet of 10 units deployed across 5 of its main DCs in the UK. At just one site, they screened staff 184,000 times in CY2018



*"Would I recommend Thruvision? Yes. One hundred percent. And I already have done so."*  
John Ferguson, Head of Loss Prevention, Hermes

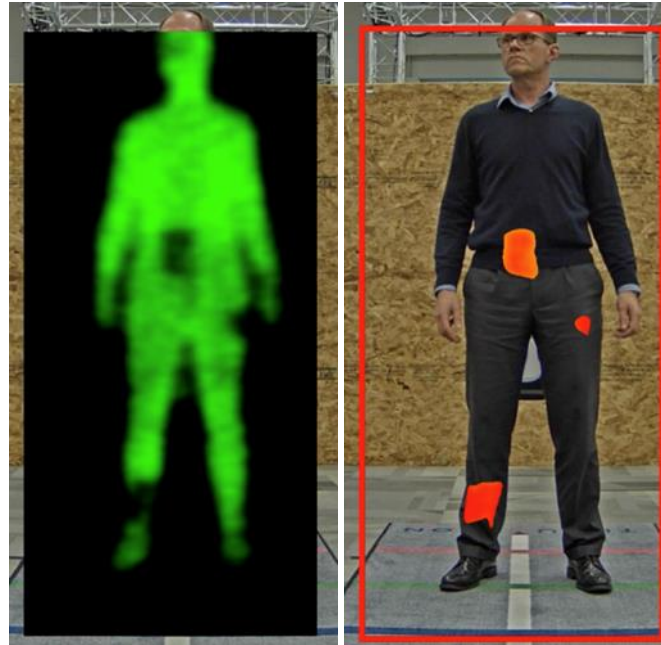


# Product development ...

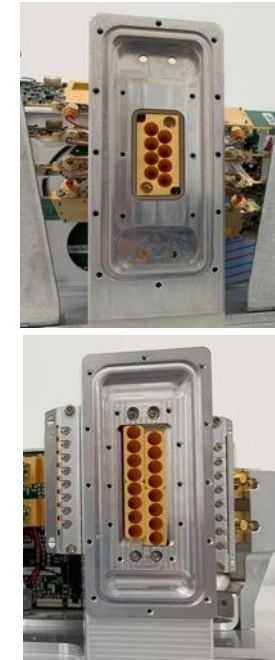
Very active R&D programme covering both hardware and software innovations



'Fusing' of three different terahertz frequencies in new outdoor product that can detect difference between metal, plastic explosive and skin



Under contract to TSA, using advanced AI-based image processing techniques to automate detection and comply with US Air Passenger Security legislation



New high performance 16 channel sensor to complement existing 4 and 8 channel product line up

# Manufacturing ...

## Continued investment in expanding production capacity and new product development to maintain market leadership

- ▼ Main facility on Milton Park, near Oxford
- ▼ Small number of very high precision, key suppliers, mainly UK-based
- ▼ Just-in-time manufacture but can surge to 20 units per month if required
- ▼ Successfully outsourced manufacturing to US partner to be closer to key customers



Four channel TS4-L camera designed for Loss Prevention market



High performance eight channel TAC camera designed for TSA

## Summary ...

- ▼ New type of people security screening technology
- ▼ Meets the growing need for fast and effective screening
- ▼ “Vetted and approved” by US Transportation Security Administration
- ▼ Growing international customer base across several market segments
- ▼ Proven, scalable manufacturing, and strong R&D programme
- ▼ Growing business with strong cash position

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