

# Enhanced Lithium-ion Battery Screening

22 January 2024

# Background



- In February 2023, a consignment comprising lithium-ion batteries caught fire while being stored in the Material Handling System (MHS).
- The Fire Services Department successfully extinguished the fire.
- The consignment experienced a subsequent re-ignition.
- It is possible that the lithium-ion batteries were mis-declared with a high power rating (Wh), necessitating their classification as Dangerous Goods when transported by air
- An Enhanced Lithium-ion Battery Screening Programme was established in August 2023.



MIS-DECLARED  
BATTERY



ROUGH HANDLING



POOR BATTERY  
QUALITY

# Enhanced Lithium-ion Battery Screening



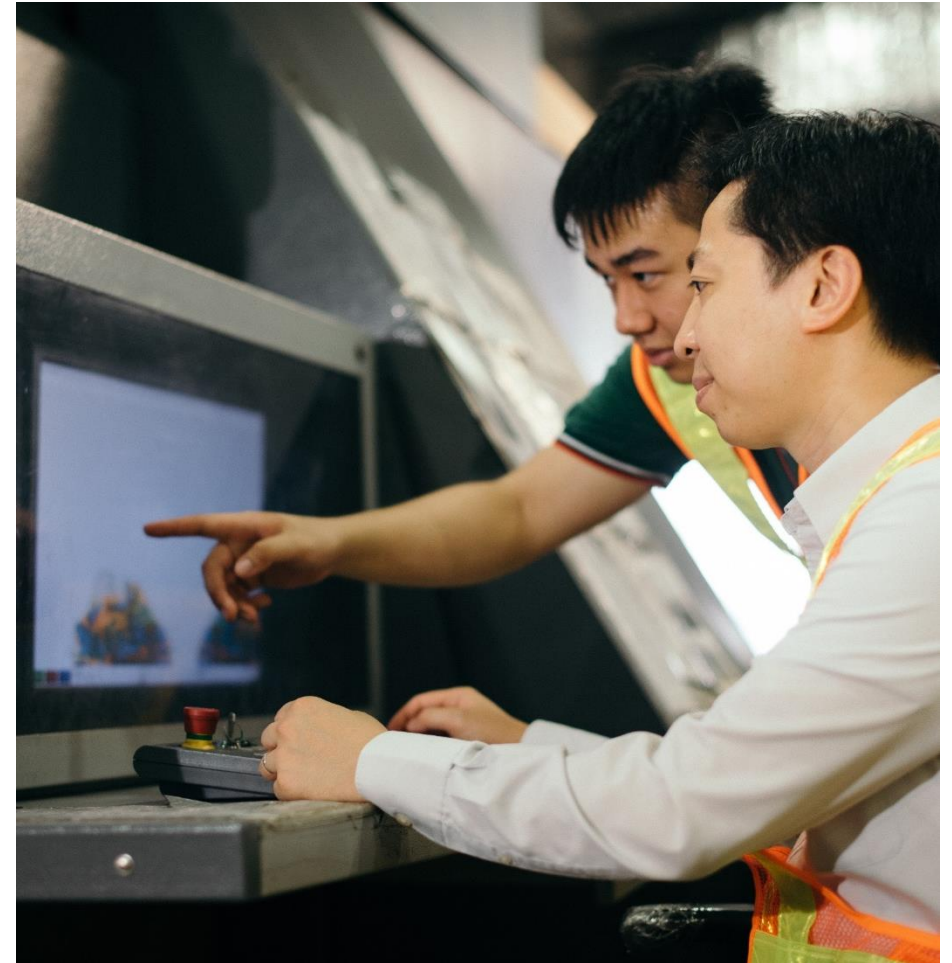
## Objectives

- Identify lithium-ion batteries (UN3480, PI965) that have been mis-declared packed with / contained in equipment in loose cargo
- Identify large size, large powered lithium-ion battery in loose cargo (e.g. e-bike, e-scooters, power supply for outdoor equipment)

## Result

After the trials with in Jun-Jul 2023, we have:

- built-up X-ray image library to identify the large size and multiple cells batteries
- completed specific training for X-ray screeners
- implemented enhanced X-ray screening at acceptance for all loose cargo in Aug





# Enhanced Lithium-ion Battery Screening



## Previous Screening

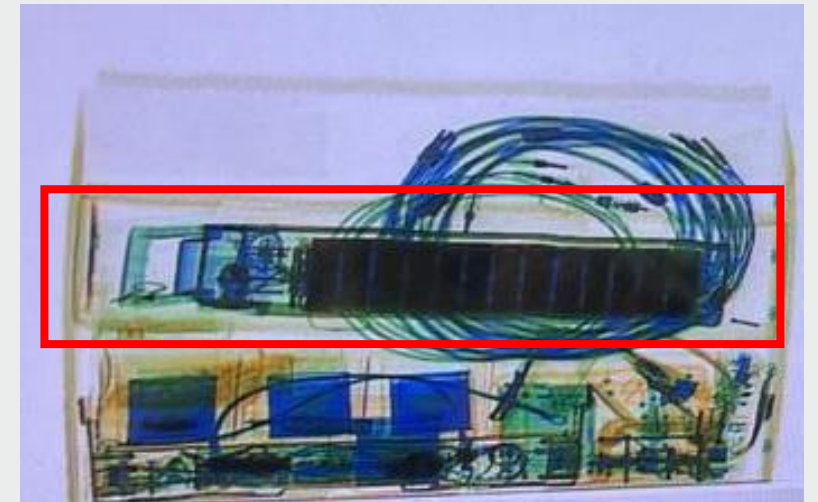
The screener would accept any lithium-ion battery, regardless of size, if it is labelled for Section IB and II.



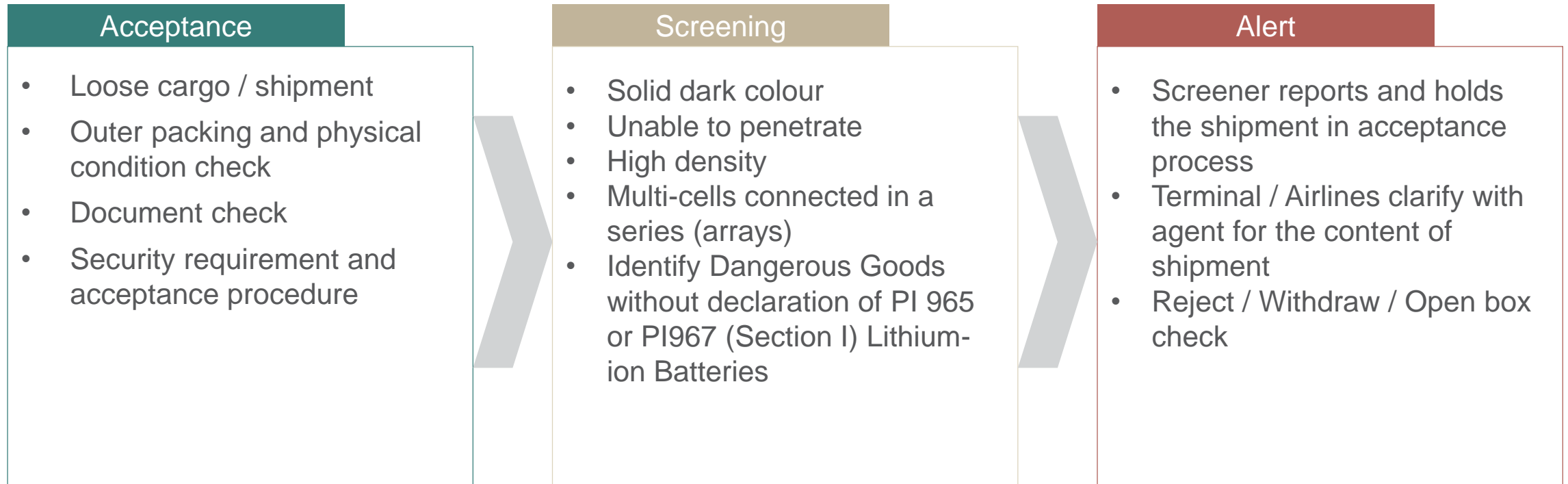
## Enhanced Lithium-ion Battery Screening

If the screener discovers any item containing the following, an alert will be raised:

- a) Lithium battery with multiple cells in a single unit.
- b) Suspected item of large size.



# Enhanced Lithium-ion Battery Screening



# Success Criteria



## Processing Speed

Efficient screening  
and no delays  
compared with  
current screening



## Detection Accuracy

Capable of detecting  
Lithium-ion  
Battery accurately  
based on the  
enhanced guideline



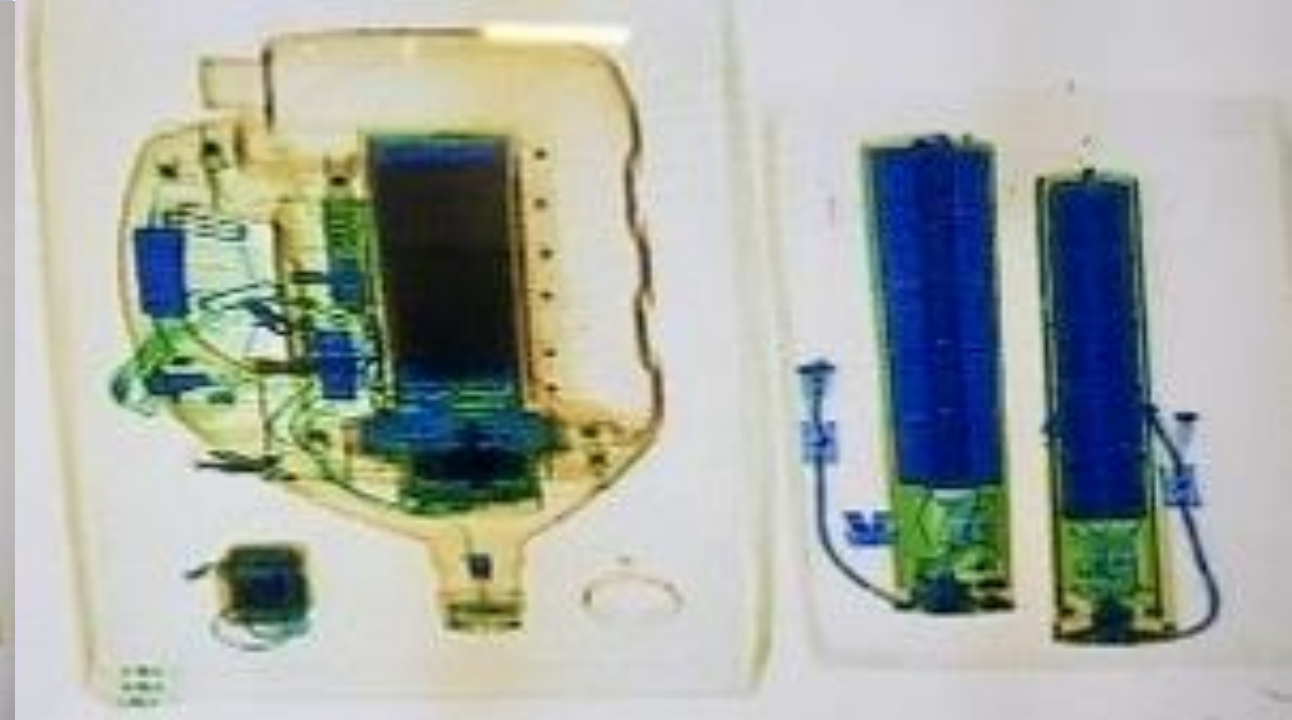
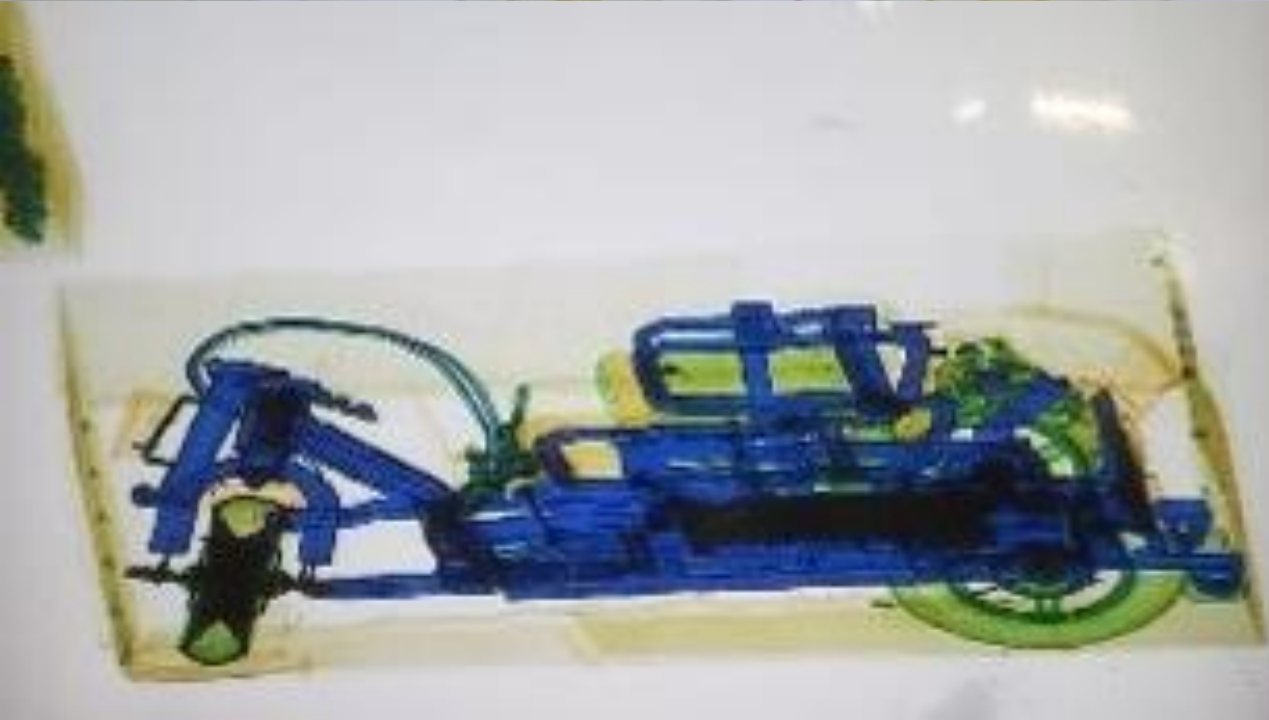
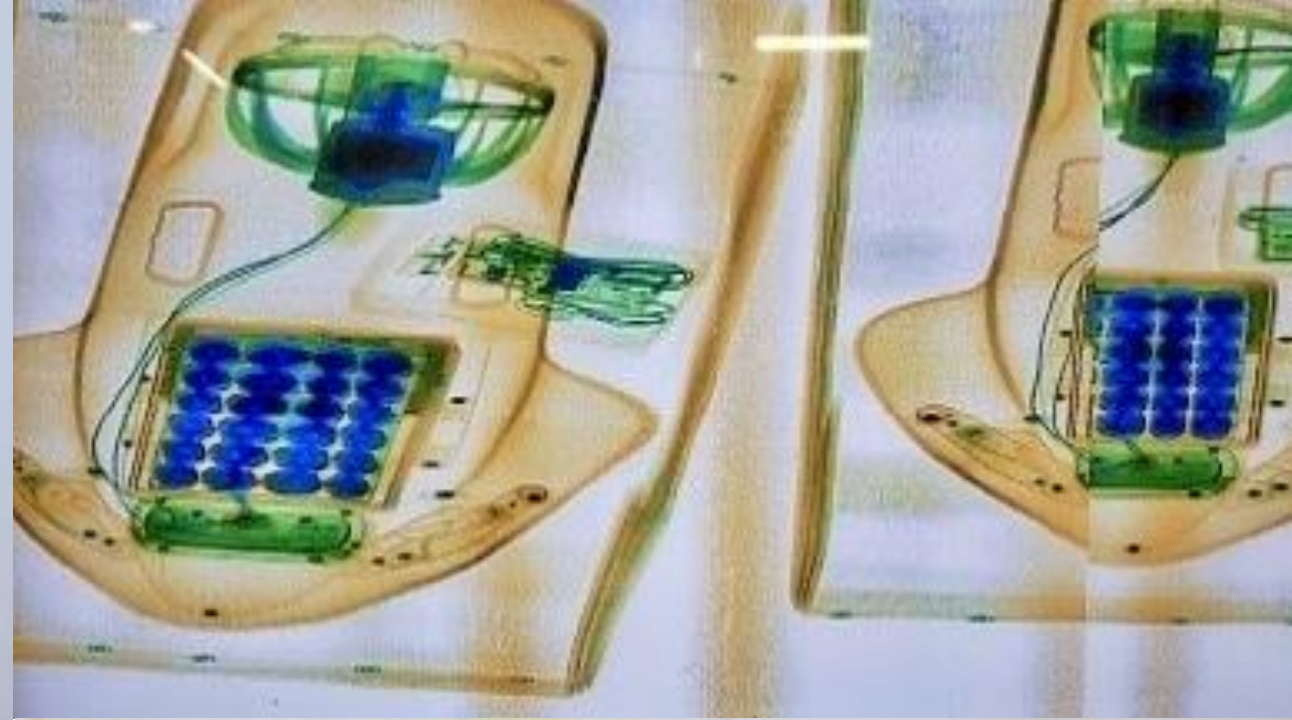
## False Positive Rate

Check against the  
false alarm rate  
within 2-3%

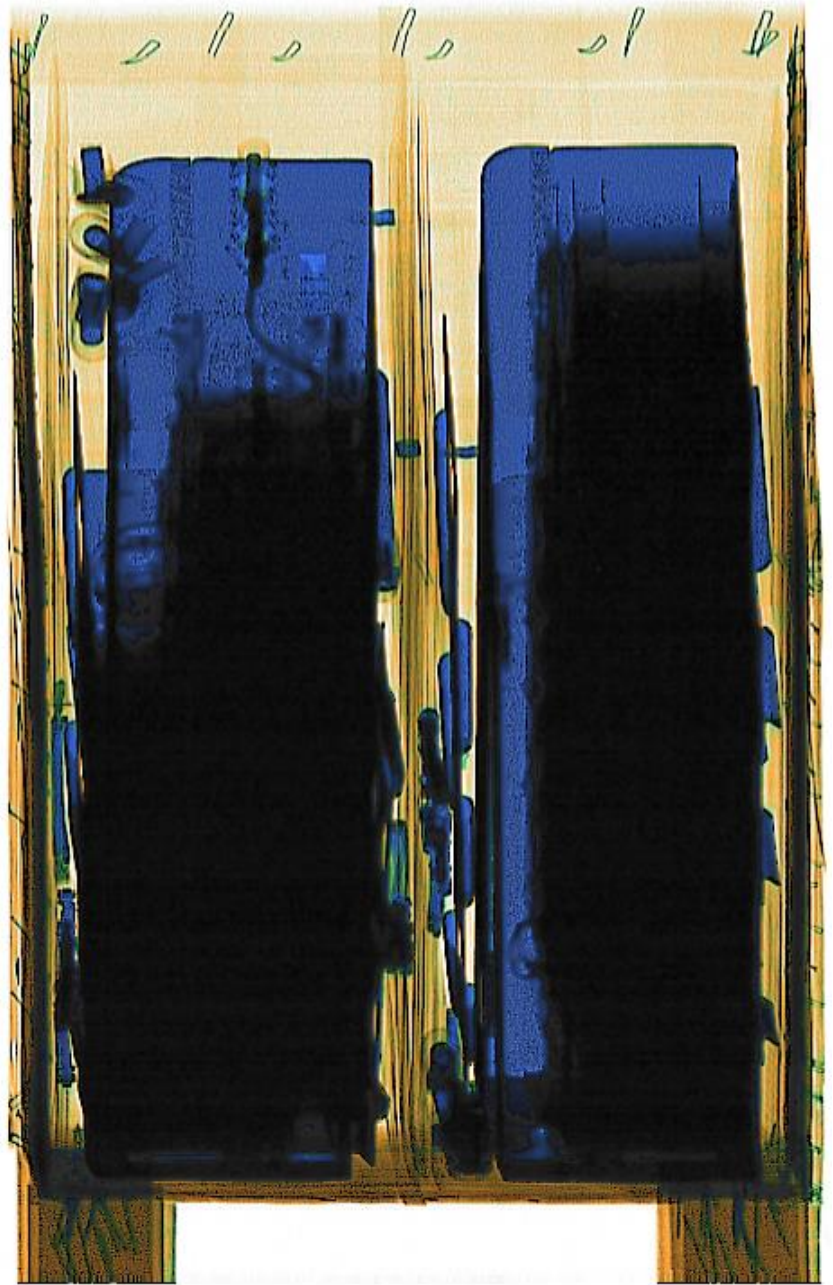
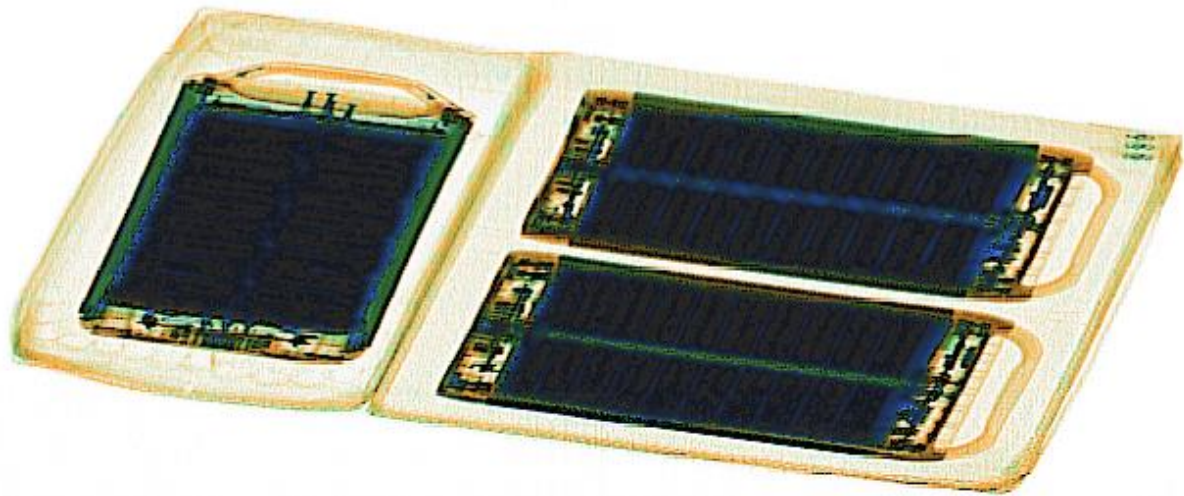
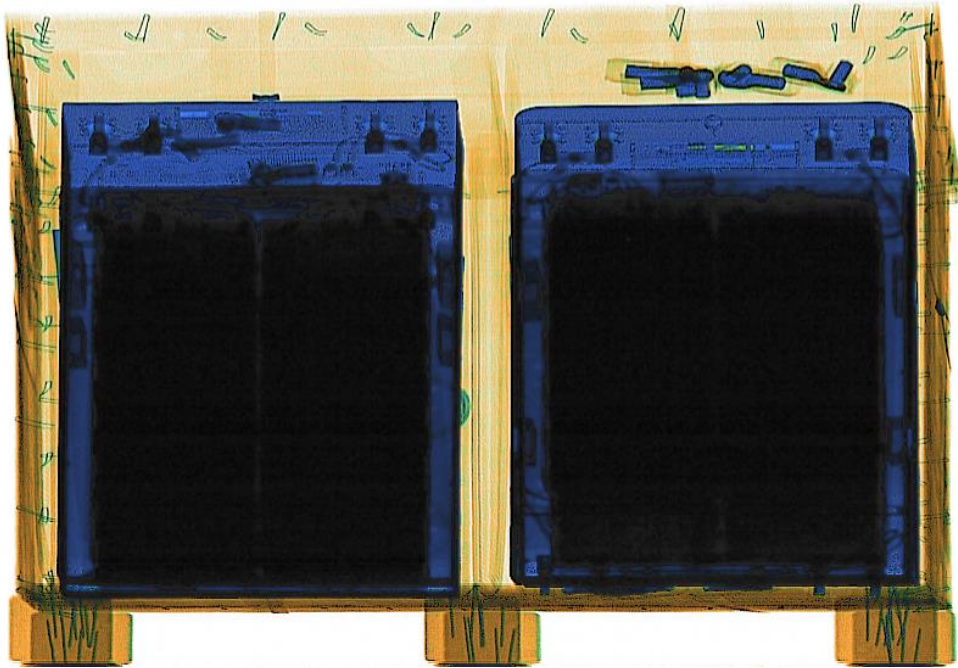


## Human Factors

Sufficient training /  
briefing to avoid  
human factors









# Next Step

