#### EXPLORE THE POWER OF ADVANCED ROBOTIC CT



## SINGLE SIDED 3D IMAGING WITH RadalyX ROBOTIC CT





## **ROBOTIC CT RESOLUTION** ON Duplex IQI



### **LASER-EXCITED** ACOUSTICS

• Contactless inspection of aerospace composites



• An excitation laser serves as the pulser and generates the ultrasound signal, while an optical microphone acts as a reciever.



## A model case: WHAT IF WE NEED TO MEASURE A GAP?





windowpanes are detectable only on edges

.... Neither tomosynthesis nor ultrasound can measure the gap size between panes.

## ANOTHER METHOD IS NEEDED: **BACKSCATTERING**



X-ray imaging:

 No missing or extra material, no edges => nothing visible in transmission image!

#### UT:

 Sound does not pass through – gap detected, but it cannot measure how thick it is!

A common situation when two parts of aircraft are attached together with shims between







•

Source and detector on the same sample side



# BACKSCATTERING - MEASUREMENT PRINCIPLE





Composite

Gap with spacers

Composite



## **BACKSCATTERING – MEASURING GAP SIZE**

• Cross sections of the plates with gap clearly visible





- Composite plates
- Depth resolution 80 μm
- Spatial resolution ~400μm



### **BACKSCATTERING** – DETECTING SPACER

- Slice of reconstructed 3D data
- Thickness resolution down to ~70 μm
- Starting work on advanced data analysis using raytracing approach
- Need to speeding up the measurement ... ~1500s per slice





### **BACKSCATTERING** – SINGLE SIDE ACCESS CT!





• CT like data

#### **CONCLUSION – VERSATILE ROBOTIC SCANNER**

#### RadalyX

Fully portable imaging platform

2D / 3D X-ray imaging

Many imaging modalities

Cutting edge photon counting detectors

**Cutting edge laser acoustics** 

Flexible platform for future NDT needs



**rd** radalytica®

#### **RADALYTICA** a.s.

#### If you have a question or interest in our services...

#### **E-MAIL US:**

sales@radalytica.com



www.radalytica.com

