

# TALCYON

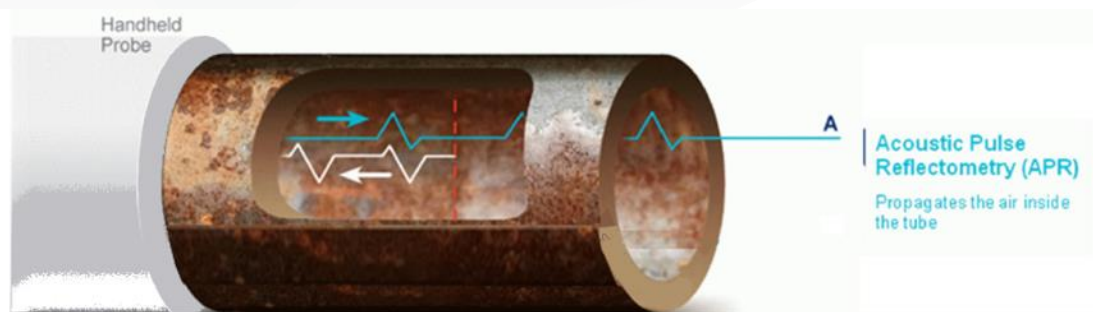
## Technology Introduction

### Pulse Reflectometry for Tube Inspection

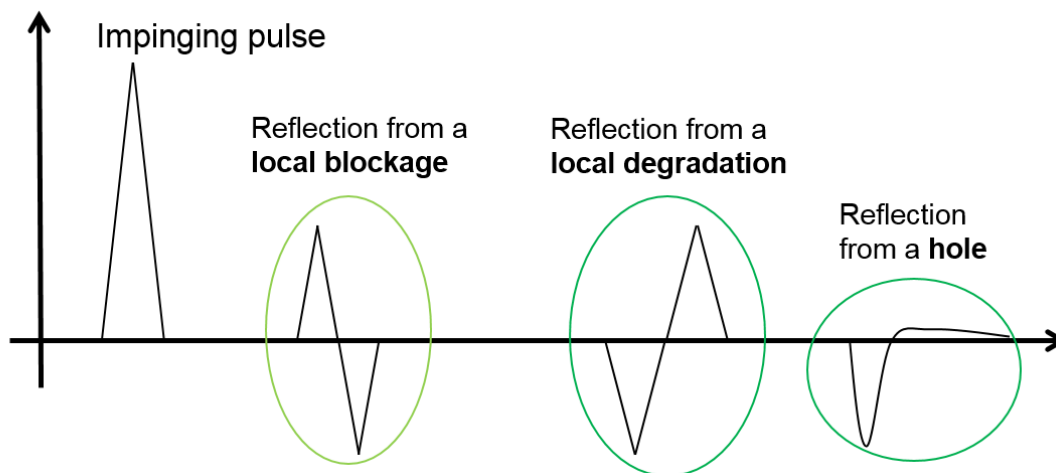
#### Overview:

**Pulse Reflectometry** is a Non Destructive Testing (NDT) technique that sends sound pulses through air medium and measures any ensuing reflections.

- Any change in the cross sectional area in the tubular system creates a reflection.
- Reflections are created by defects in the tube
- Each defect has its own signature and our patented algorithms identify and report location, type and size of defects

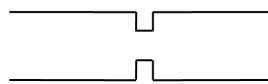


#### APR (Acoustic Pulse Reflectometry) Signatures:



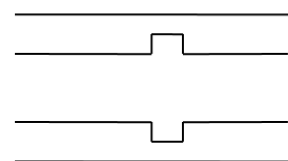
#### Blockage

deposits, dents,  
welding material



#### Wall Loss

pitting, erosion



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## **Uniqueness of APRIS:**

- Non Invasive (uses only sound waves)
- Applicable for any shape or configuration (Straight/ multiple bend, finned, coiled, spiral, helical tubes etc.,)
- Inspect any tube materials (Ferrous, Non-ferrous, graphite, composites etc.,)
- Ultrafast inspection (Less than 10 seconds per tube)
- Easy to use
- Sophisticated algorithm to identify precise location, type and size of defects
- Intuitive software with artificial intelligence to generate reliable and quality report
- Seamless communication with portal to enhance user interactions

## **Pre requisites to carry out APR Inspection:**

- Tubes to be cleaned and dried (No water stagnation)

## **Flipsides of APR:**

- Defects in the outer diameter can't be detected
- Inept to detect the defects under deposits/scales
- Cracks under pressure (Closed Cracks) shall not be detected

## **International Standards:**

- ASTM E2906/E2906M-13: Standard Practice for Acoustic Pulse Reflectometry Examination of Tube Bundles
- ASME BPVC.V-2017: Article 18-Acoustic Pulse Reflectometry (APR) Examination