

Case Study

Steam Boiler Inspection Using ELIOS drone

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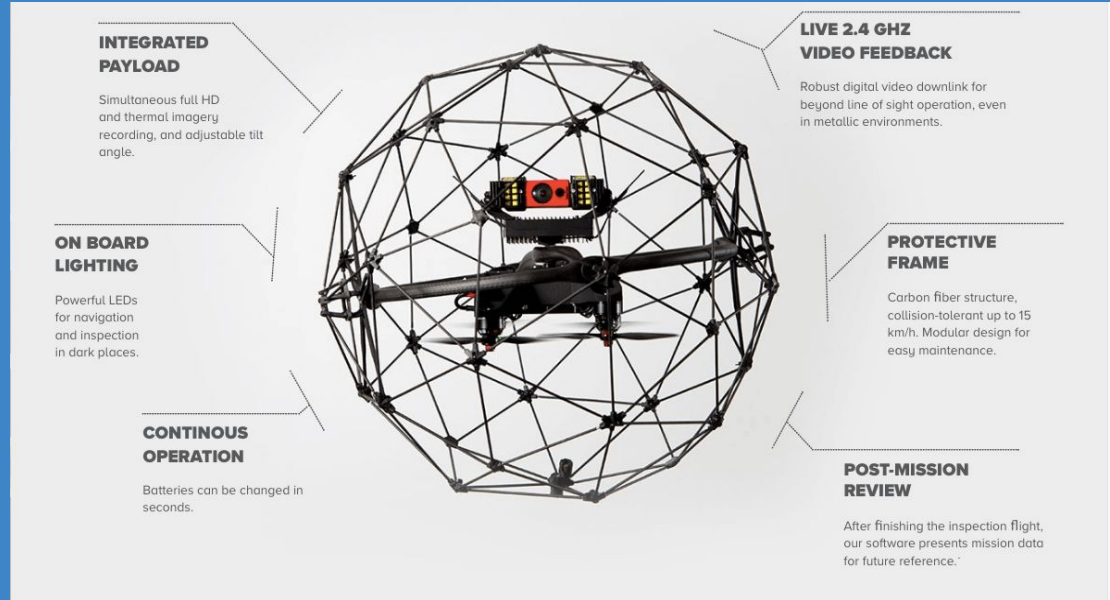


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NDT Level III

Overview



- Kronos Group Ltd. was contracted to perform a video survey of an industrial boiler undergoing maintenance.
- A collision-tolerant drone “ELIOS” was chosen to perform the inspection.



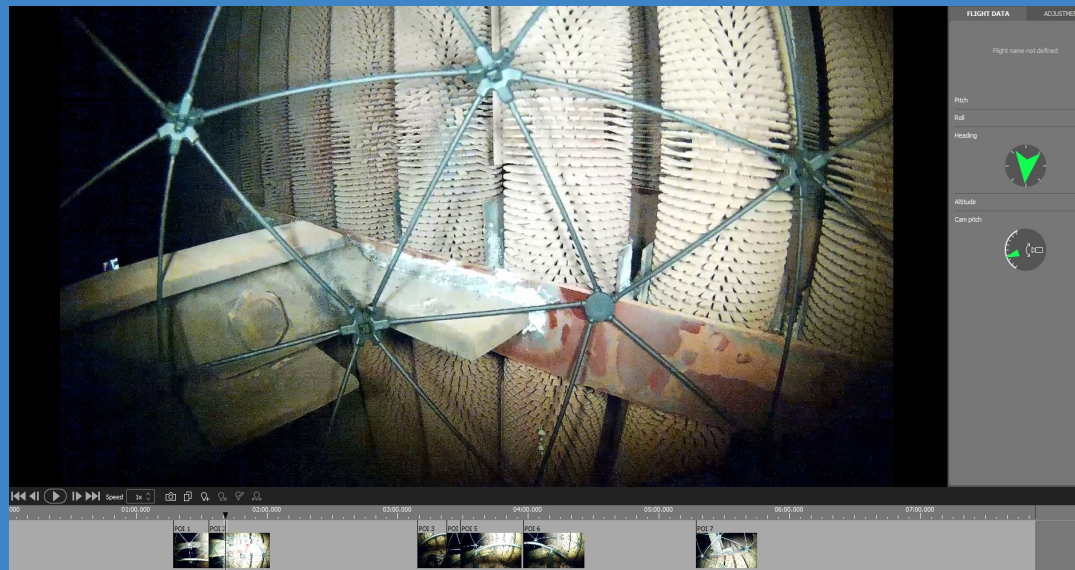
Operational Plan

- The drone, which is designed to enter through a standard man cover opening, was sent to collect the data.
- The entire flight was performed using FPV (First Person View), with the operator never needing to enter the confined space.



Findings

- The entire flight was recorded for later “frame by frame” evaluation by dedicated software. Special areas of interest can be marked and photographed during the flight.



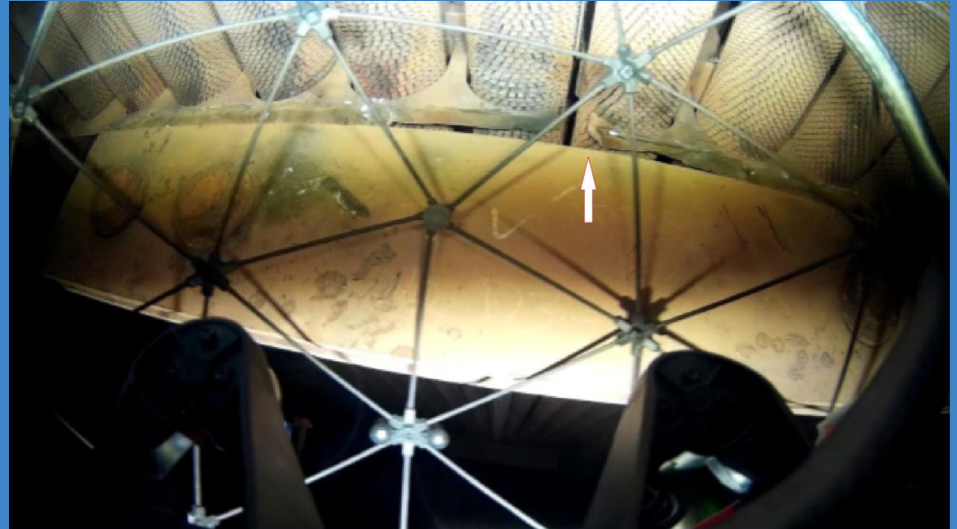
Findings

The drone was used to visually inspect the integrity of pipes, ribs, welded joints, missing bolts, FOD and for generally visible damage.



Findings

Some of the findings that were identified include: material fracture, residue on the ribs...





Findings

and deformed metal ribs.



Summary

Some of the advantages that were identified:

- 1) Time Efficiency - The drone can easily reach hard to get places. No scaffolding required. One team of operators can cover a large inspection area.
- 2) Cost Efficiency - Steam boiler was inspected much faster and down times can be lower than usual.
- 3) Safety - No need to send personnel to high/hazardous places or perform oxygen checks for confined spaces.
- 4) Records - All data is recorded for future reference. Video or images of findings can be shared among other employees for a better decision making process.



Thank You

