INL/CON-20-60017-Revision-0

Route-Operable Unmanned Navigation of Drones (ROUNDS)

October 2020

Ahmad Y Al Rashdan

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Prepared for the
U.S. Department of Energy
Under DOE Idaho Operations Office
Contract DE-AC07-05ID14517

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Ahmad Al Rashdan, Ph.D.

Instrumentation, Control, and Data Science

Idaho National Laboratory

UAS for Electric Utilities 2020 Virtual Workshop

www.inl.gov

Idaho National Laboratory

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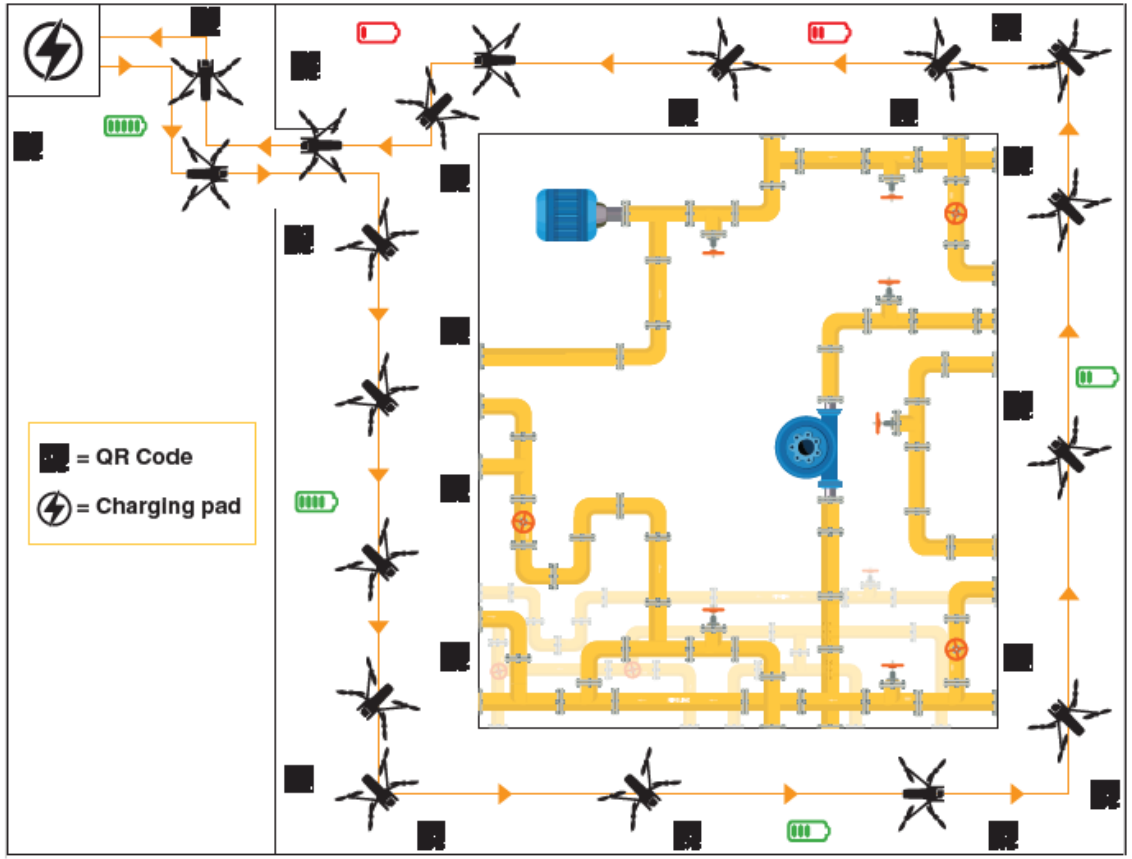
Acknowledgements

Dakota Roberson,
Michael Thompson,
L. Michael Griffel,
Michael Wheeler,
Roger Boza, and
Roger Lew

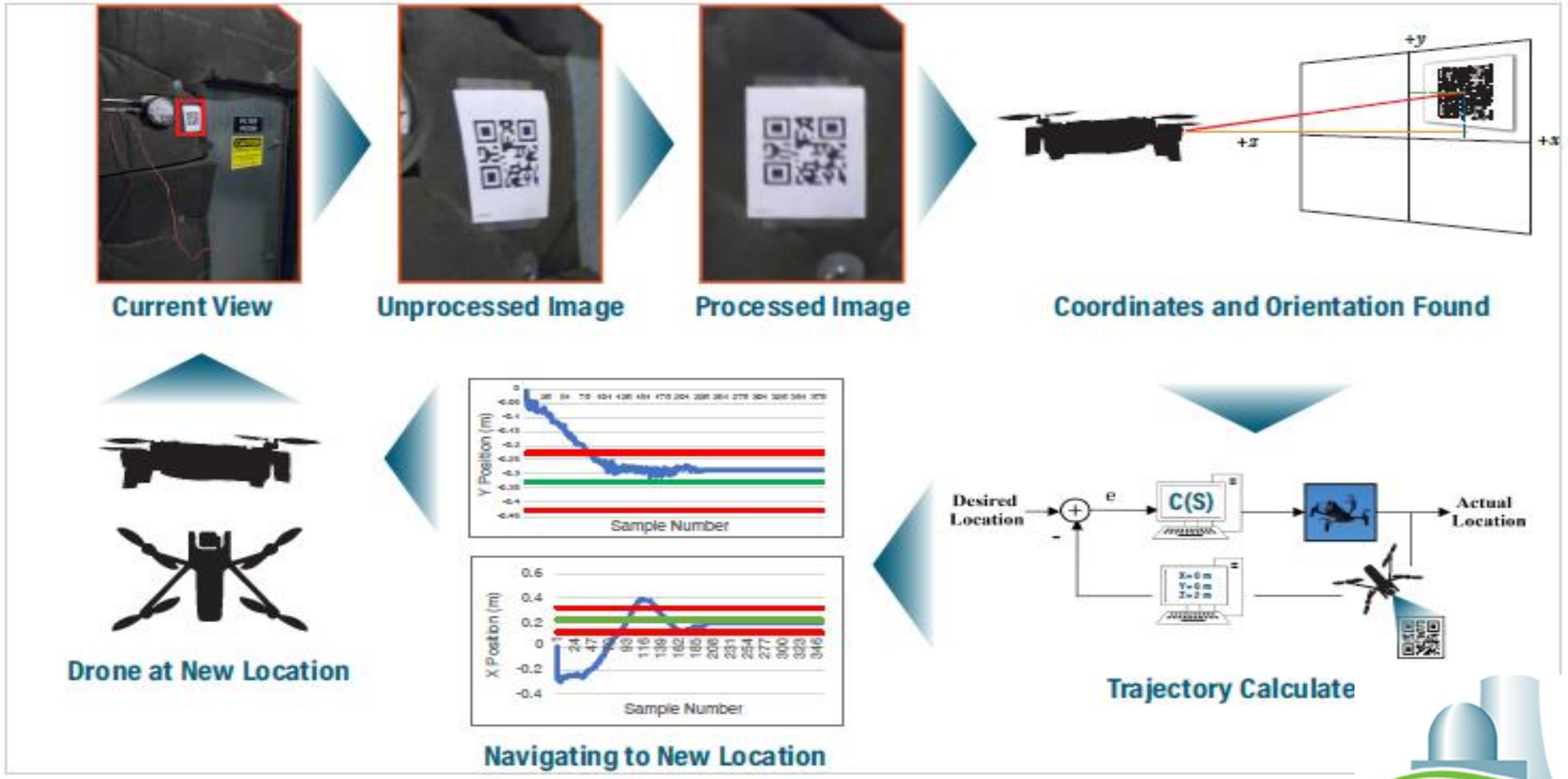
Overview

Concept

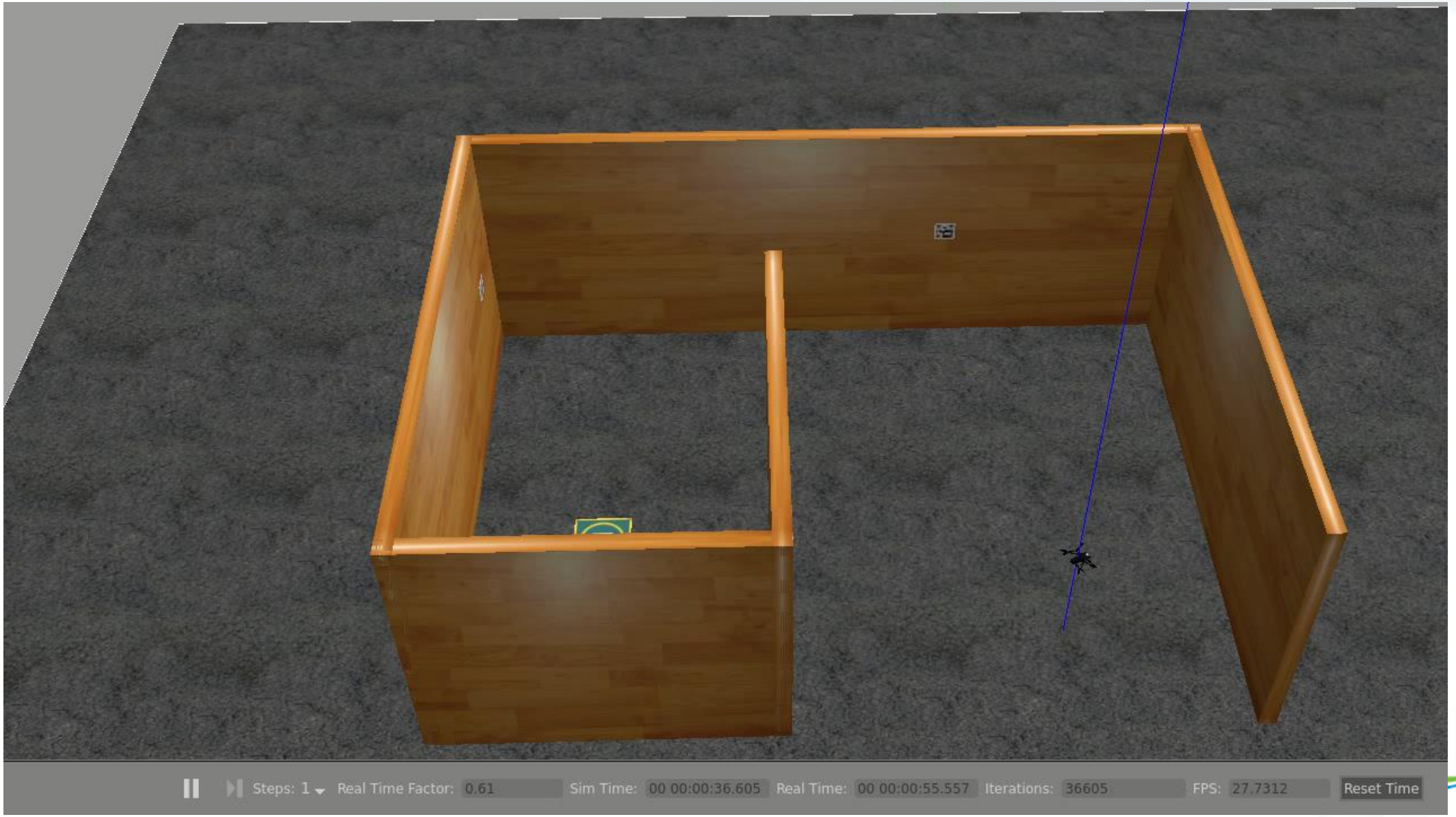

= QR Code
= Charging pad


Position 2
X = 0 m
Y = 0 m
Z = 2 m
View 2
View 1
(distorted)
(reprocessed)
Position 1
X = 2 m (right)
Y = 0.5 m (below)
Z = 2 m (normal)
Inverse Calculation

Methodology



Current Status



Benefits

- Drone agnostic- Currently using OTS drone (low cost).
- No additional hardware needed for the drone
- QR codes are printed on A4 sheets- QR codes can be easily added for change of conditions
- Way points are fed through a mapping table or imbedded into the QR codes
- Very accurate (few inches accuracy)
- Utilize external computational resource for analysis
- We do not sell products!

Questions?

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