INTERNATIONAL TOWER CRANES
www.khl.com/itc London, 10 and 11 May
CONFERENCE & RECEPTION 2017
INTERNATIONAL CRANES AND SPECIALIZED TRANSPORT
khl

Meet the Team

Mor Ram-On

CTO

Meet the Team

Zack Ram-On

C E O

- Civil engineer, Technion Graduated
- 3 years of experience at Electra construction
- VP Sales & Business development at ShapeDo
- IAF special forces veteran

Mor Ram-On

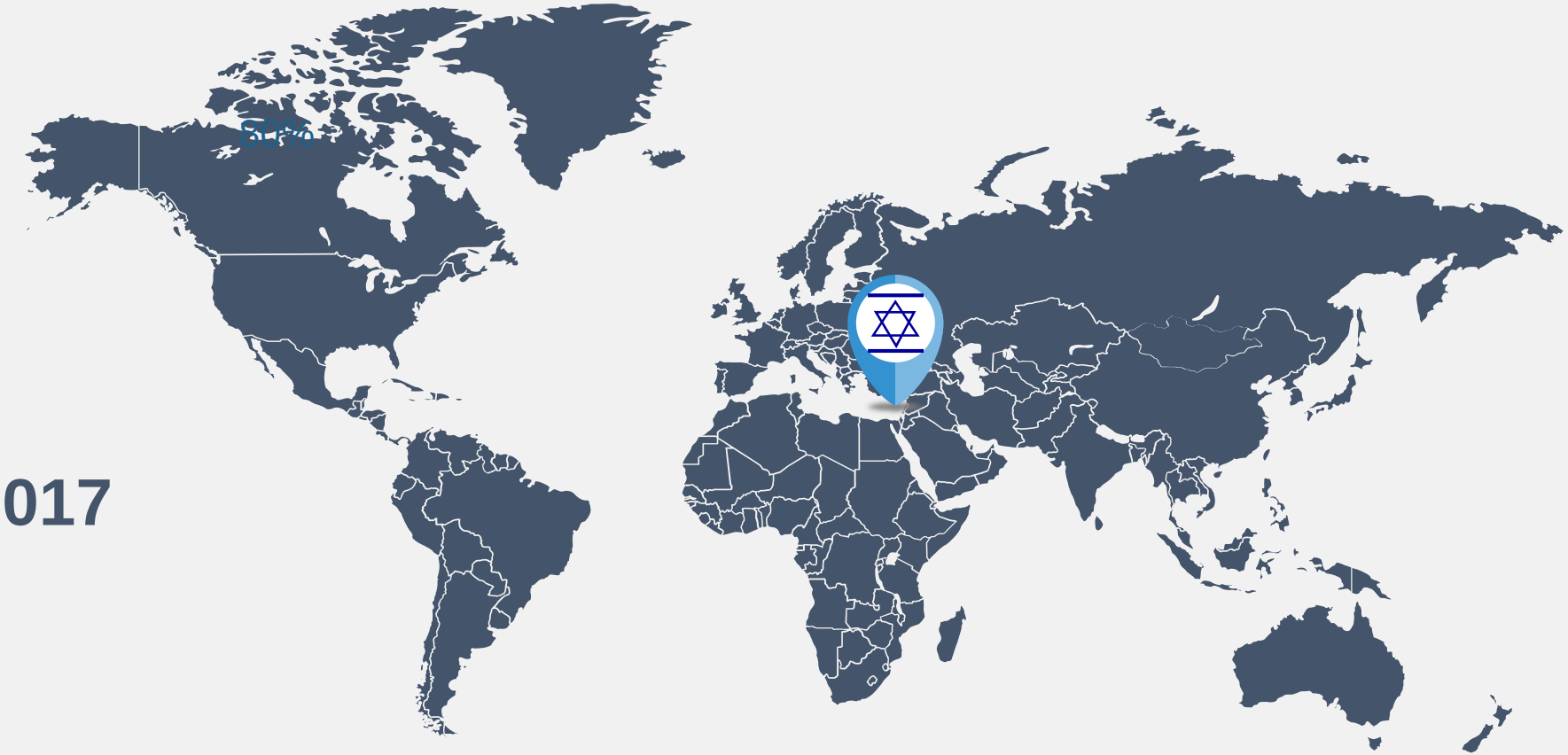
CTO

- Aerospace engineer, Technion Graduated
- 6 years of experience at Rafael advanced defense systems
- Algorithms team leader at CNOGA medical
- IDF special forces veteran

About IntSite

Based in Israel

Established in Jan 2017



Where it’s all started ?

Our Vision

Increase Efficiency, Profitability and Safety during the construction process

The Pain – Human Vs. Computer

The Task:

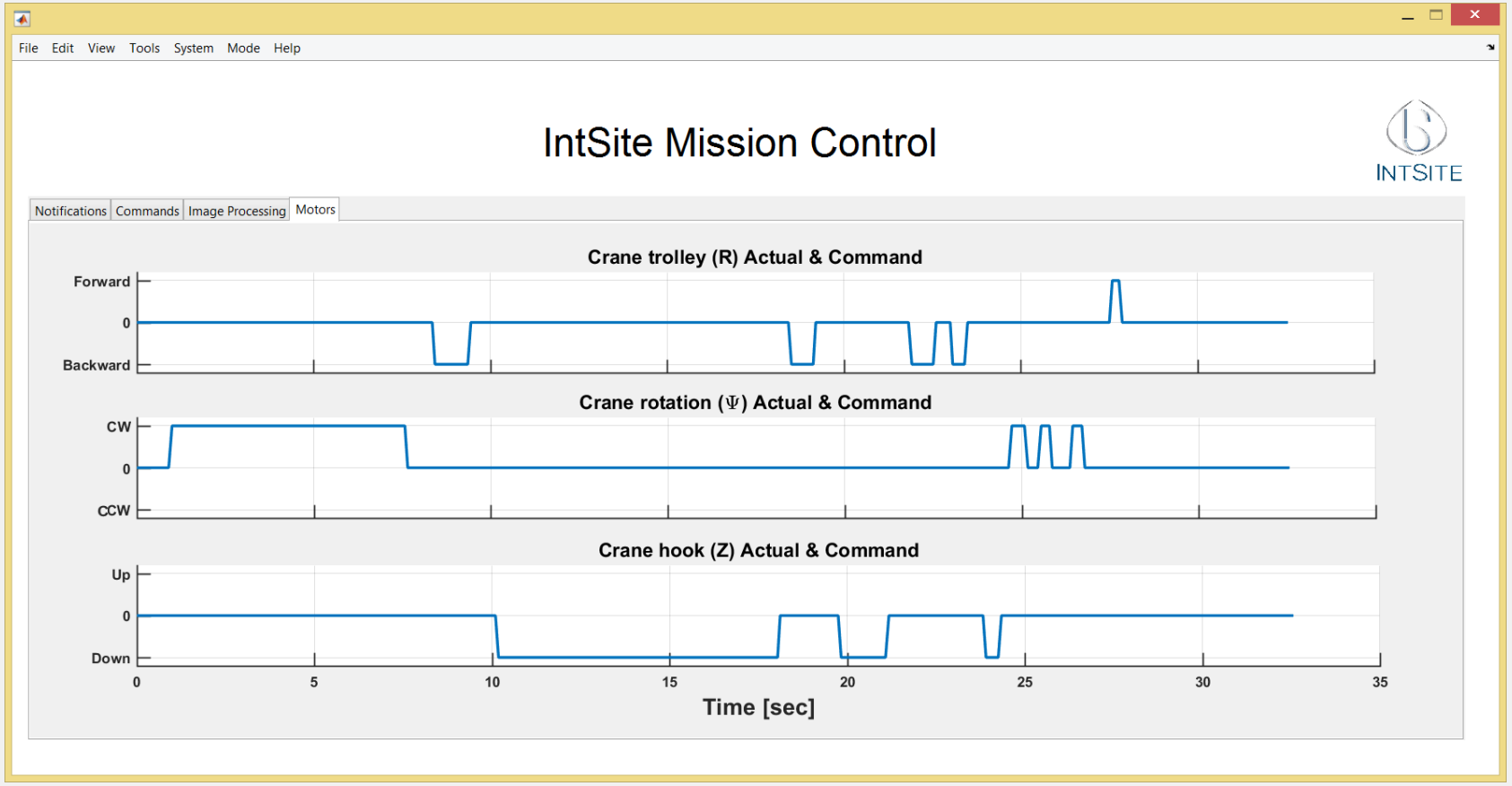
Reach the concrete mixer in the quickest and most safety route

The Pain – Human Vs. Computer

Unskilled Operator

serially – 1 axis at a time

Small corrections in the end



The Pain – Human Vs. Computer

Unskilled Operator

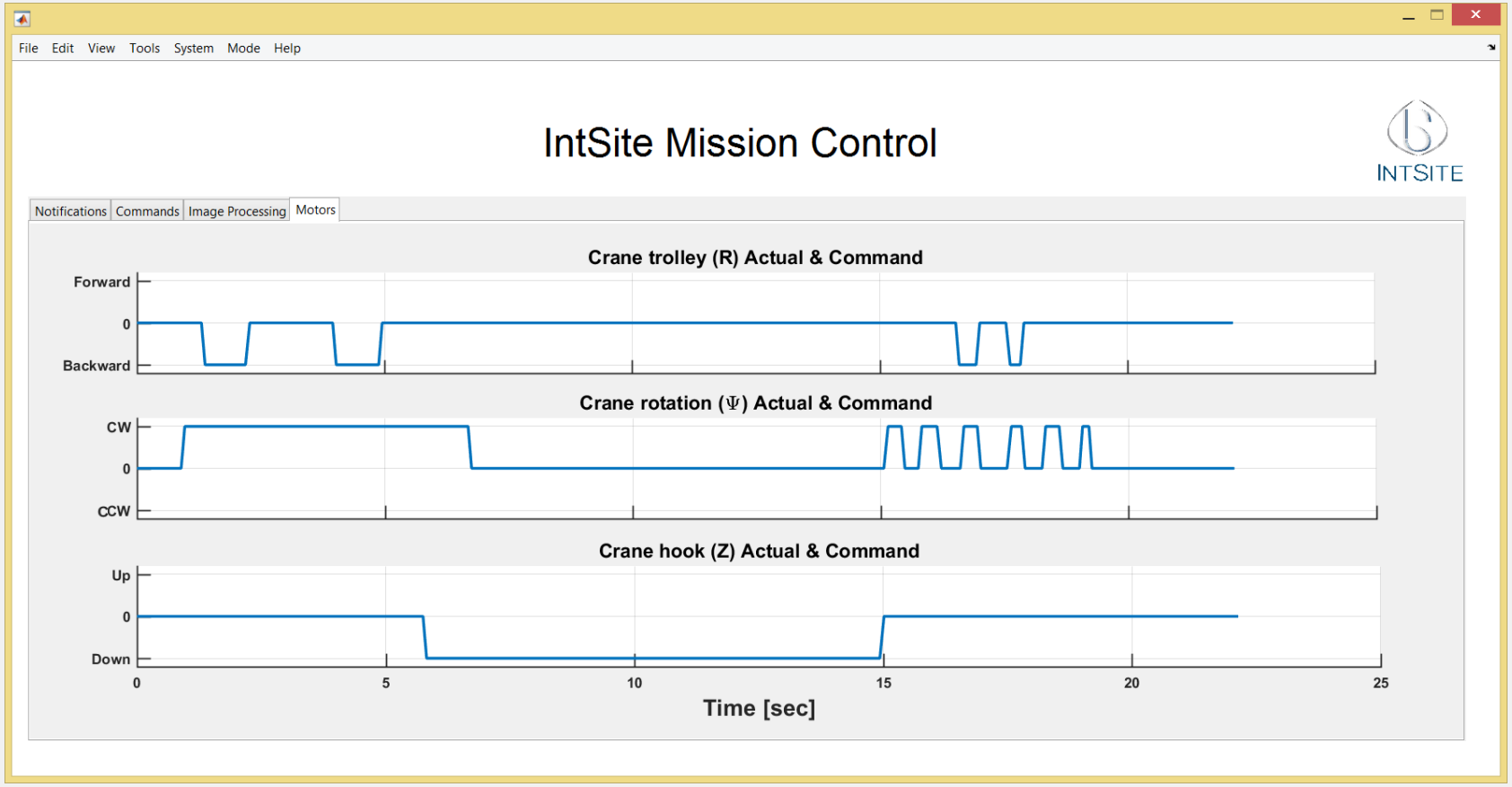
serially – 1 axis at a time

Small corrections in the end

Skilled Operator

Semi parallel

Small correction in the end



The Pain – Human Vs. Computer

Unskilled Operator

serially – 1 axis at a time

Small corrections in the end

Skilled Operator

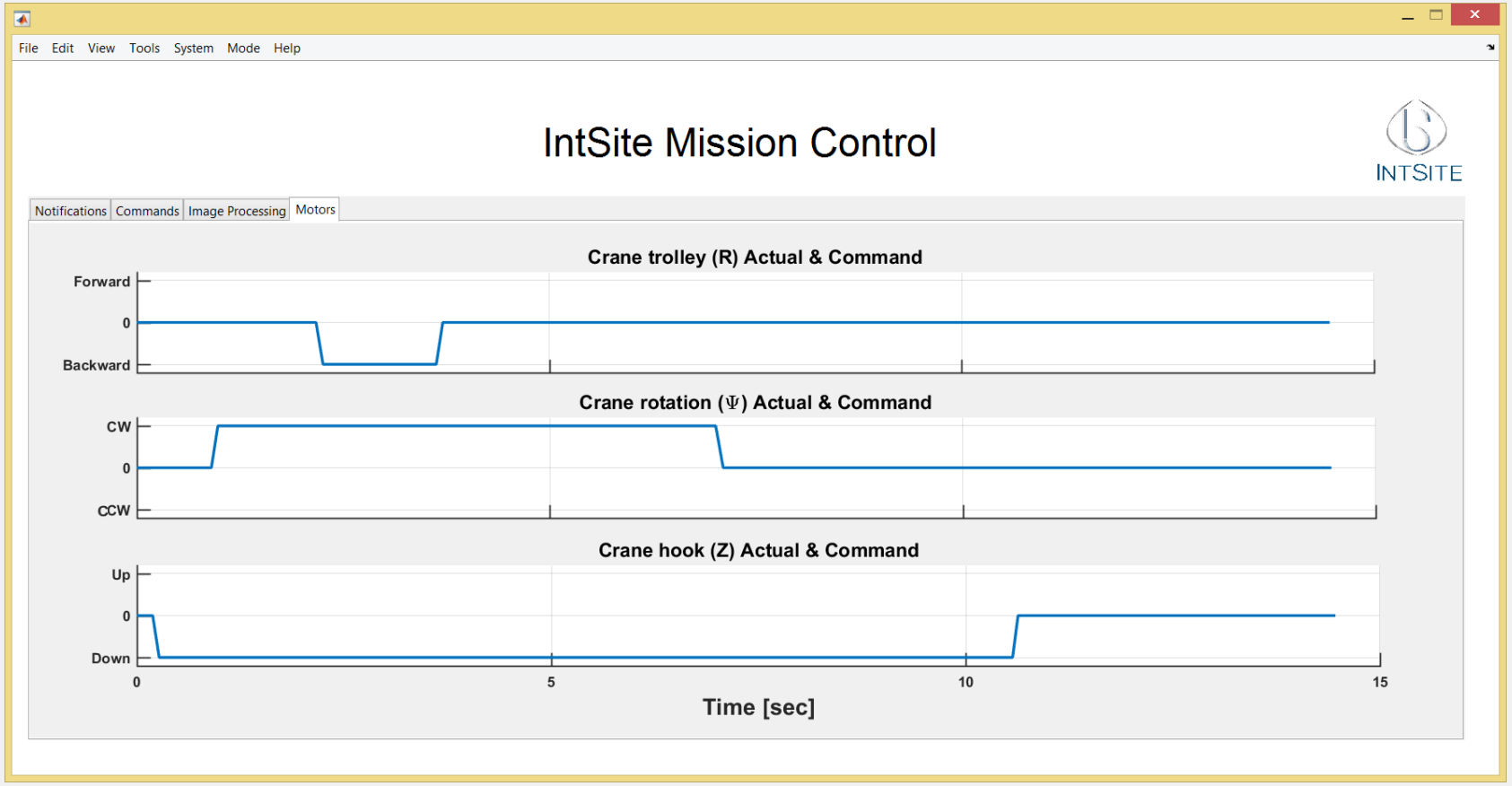
Semi parallel

Small correction in the end

IntSite's Autopilot

Fully parallel

~20% faster



Our Solution

Add-on system which integrates to an existing crane, enables it to become fully autonomous, safer and more efficient

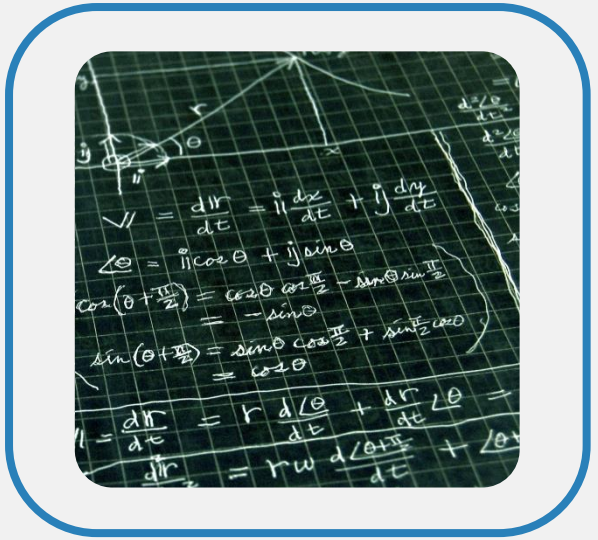
In addition, we collect real time data from the jobsites and supply the management team with important insights

Our Technology

Off the Shelf Hardware

Sensors

Unique Software



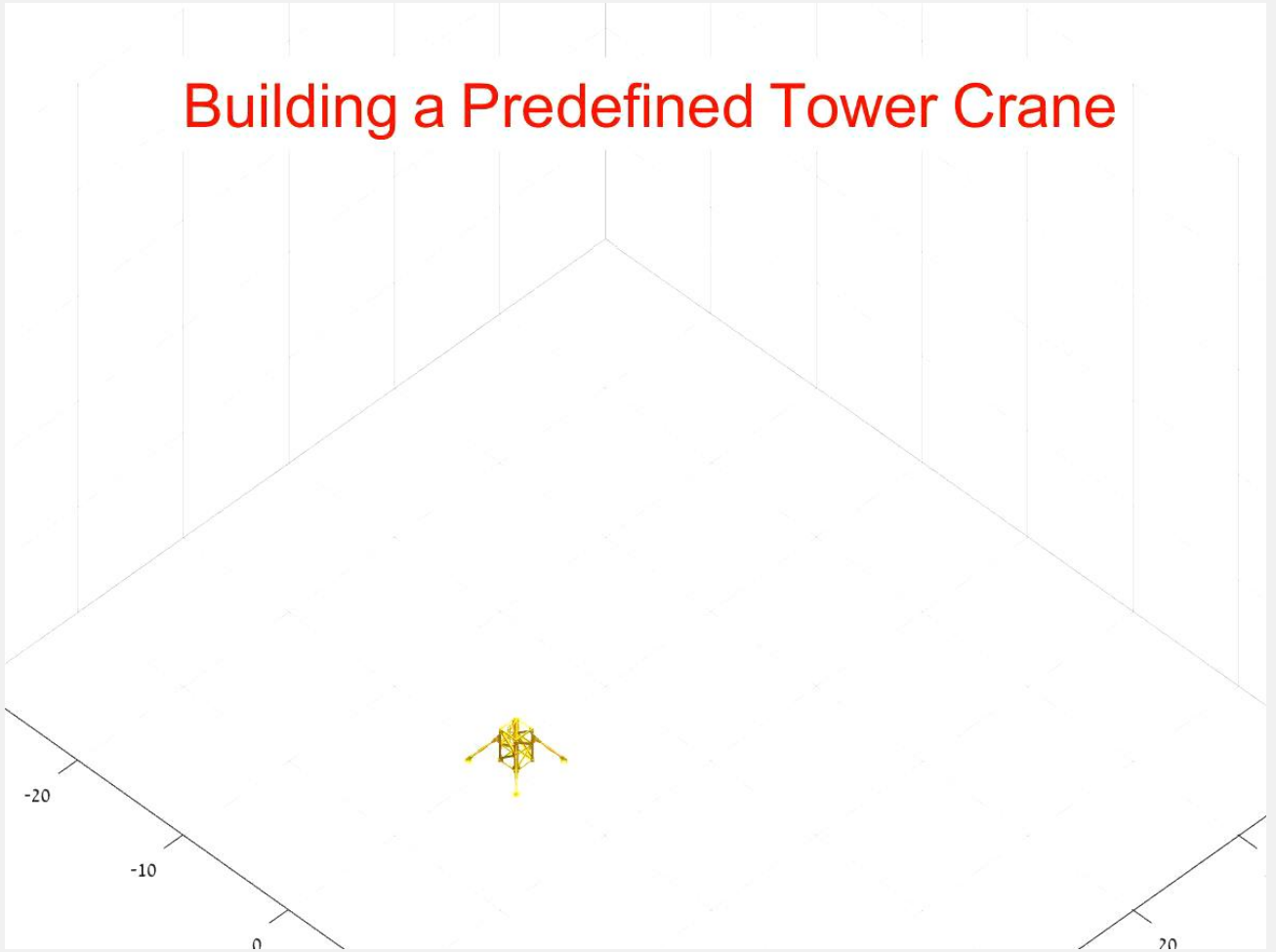
Missiles Based Algorithms

Theoretical Proof of Concept

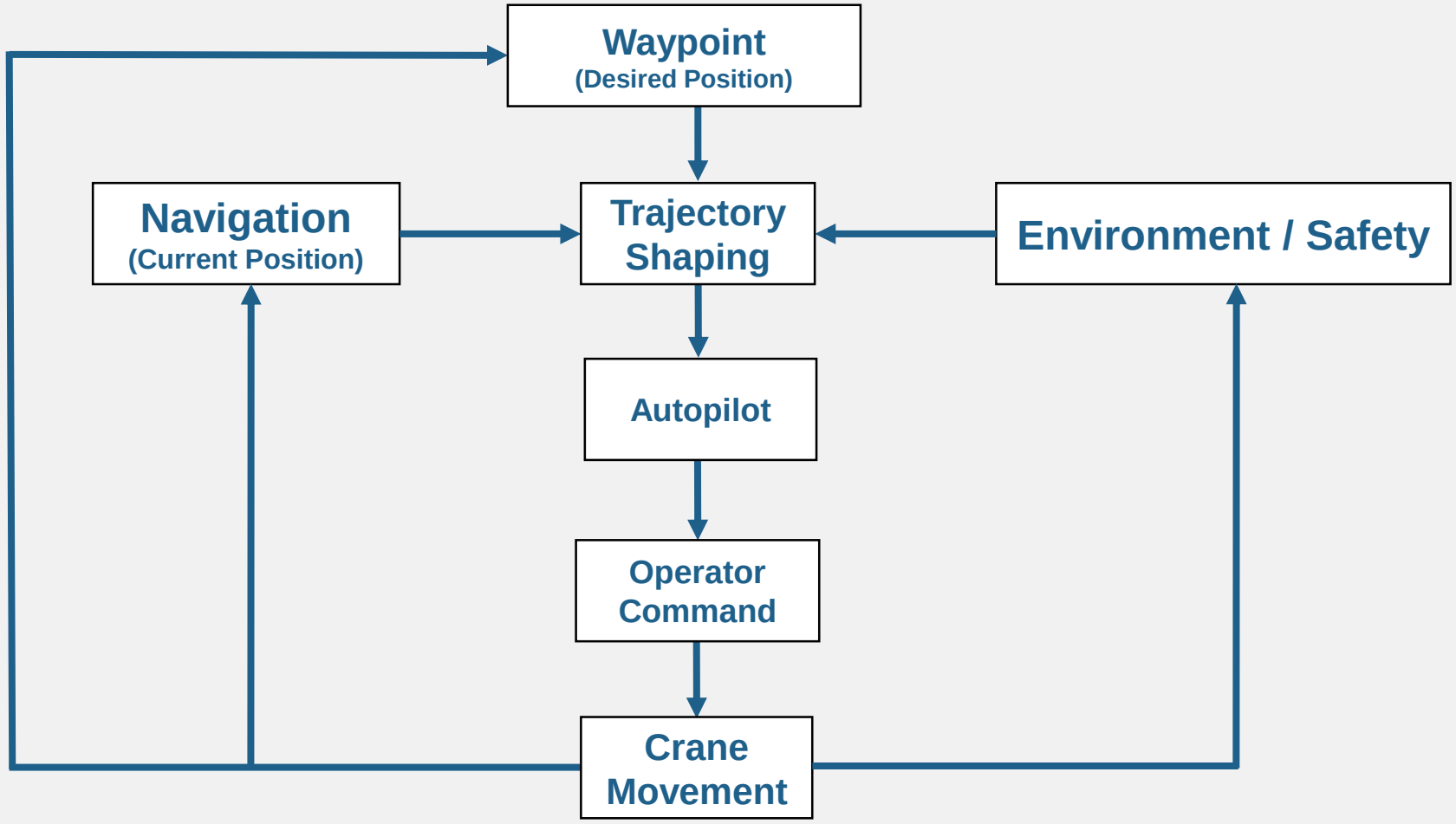
How much time can be saved

In a sterile environment?

(Academic research ~ 35%)



Top Level Block Diagram



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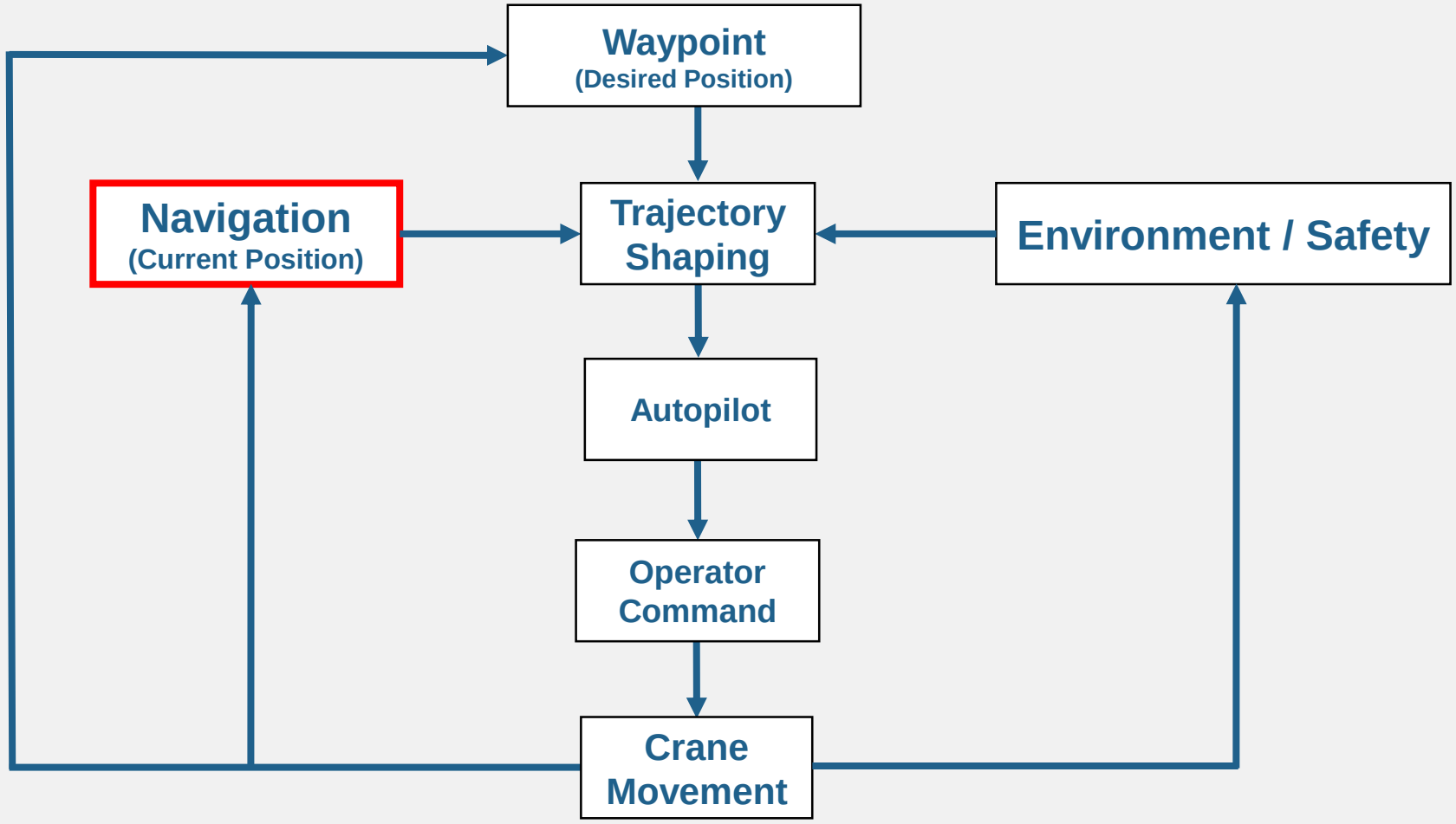


Crane & Hook Block Position

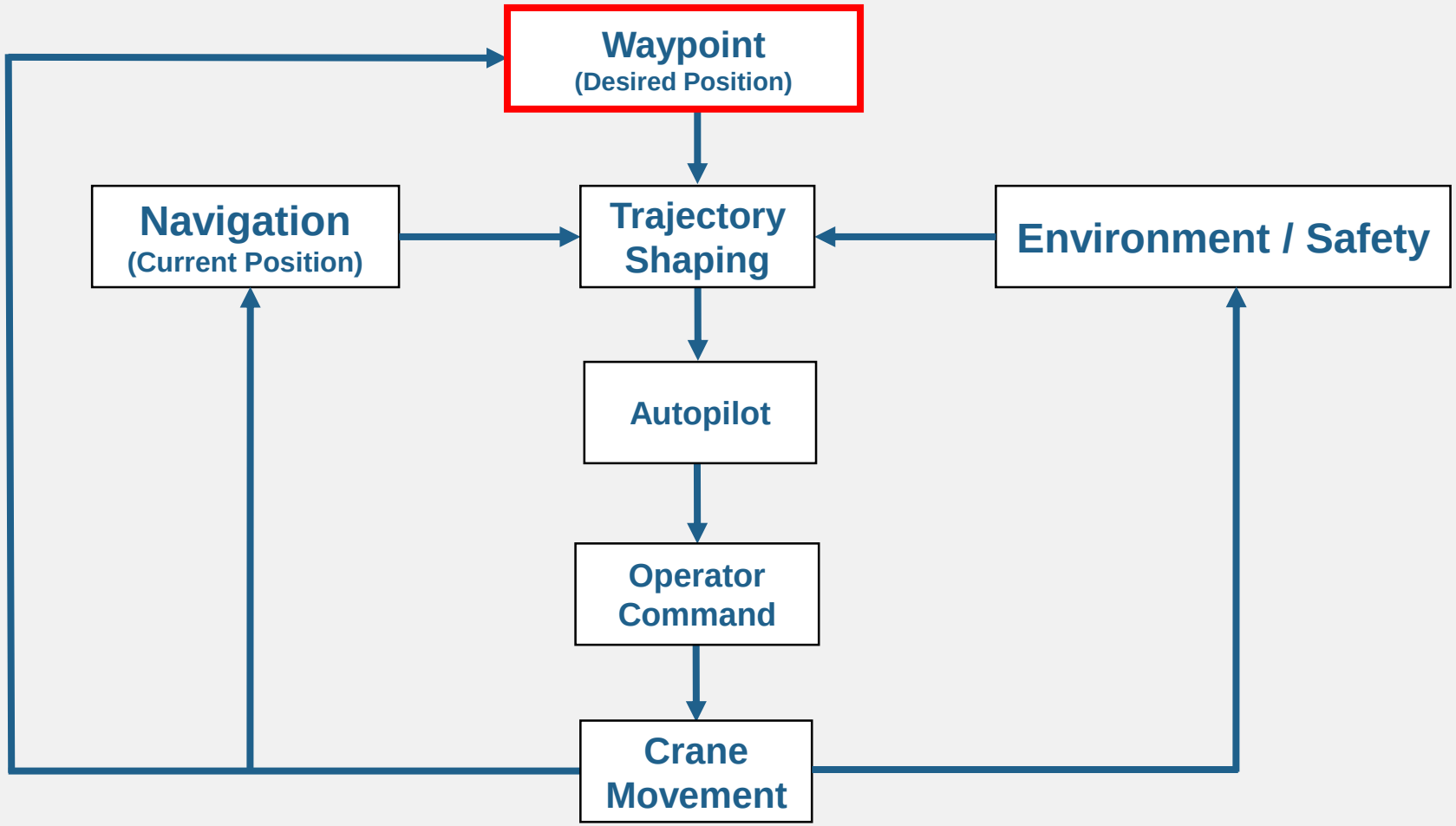
Encoders

+

GPS, IMU, Barometer, Camera

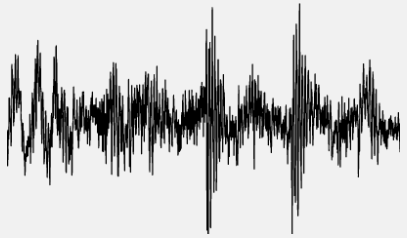
Data Fusion

Top Level Block Diagram

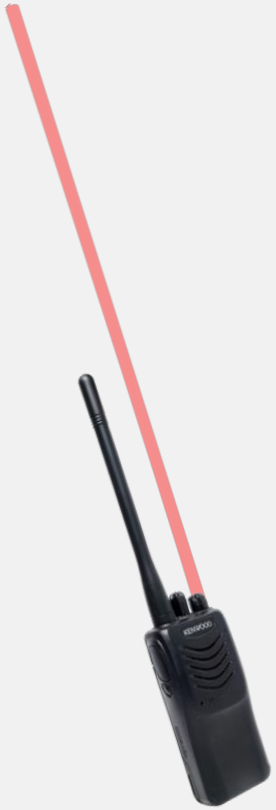


Waypoints / Desired Position

Voice Recognition

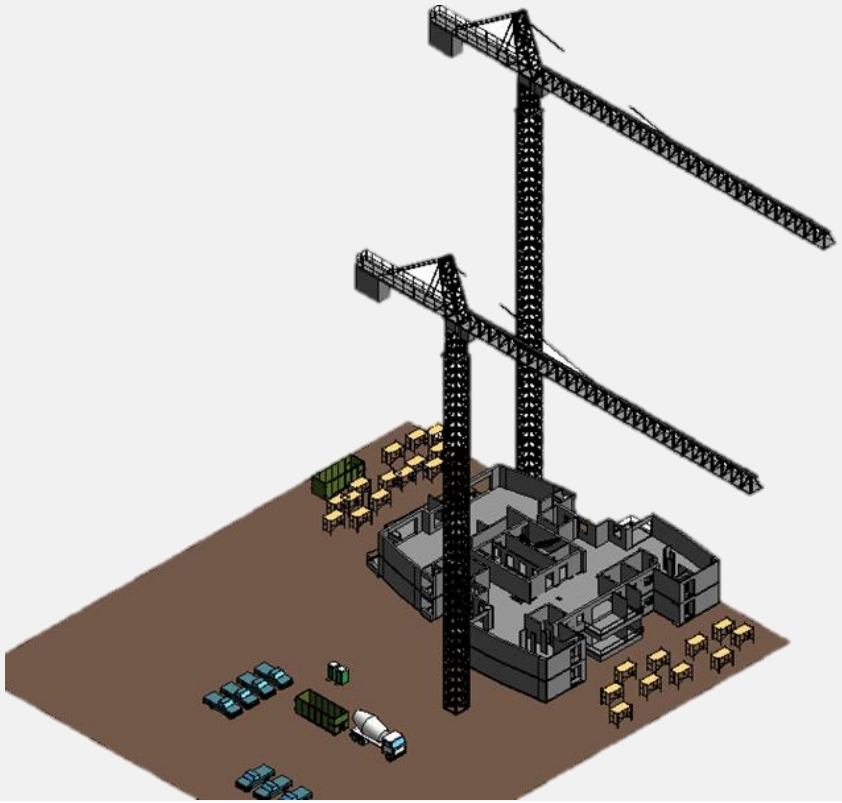


Laser beam



Waypoints / Desired Position

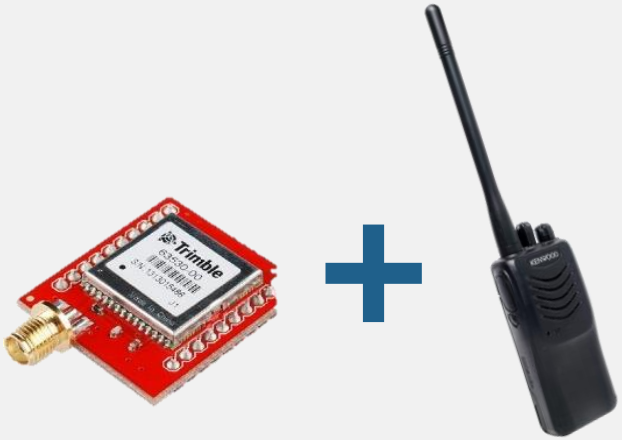
BIM



Preset Locations

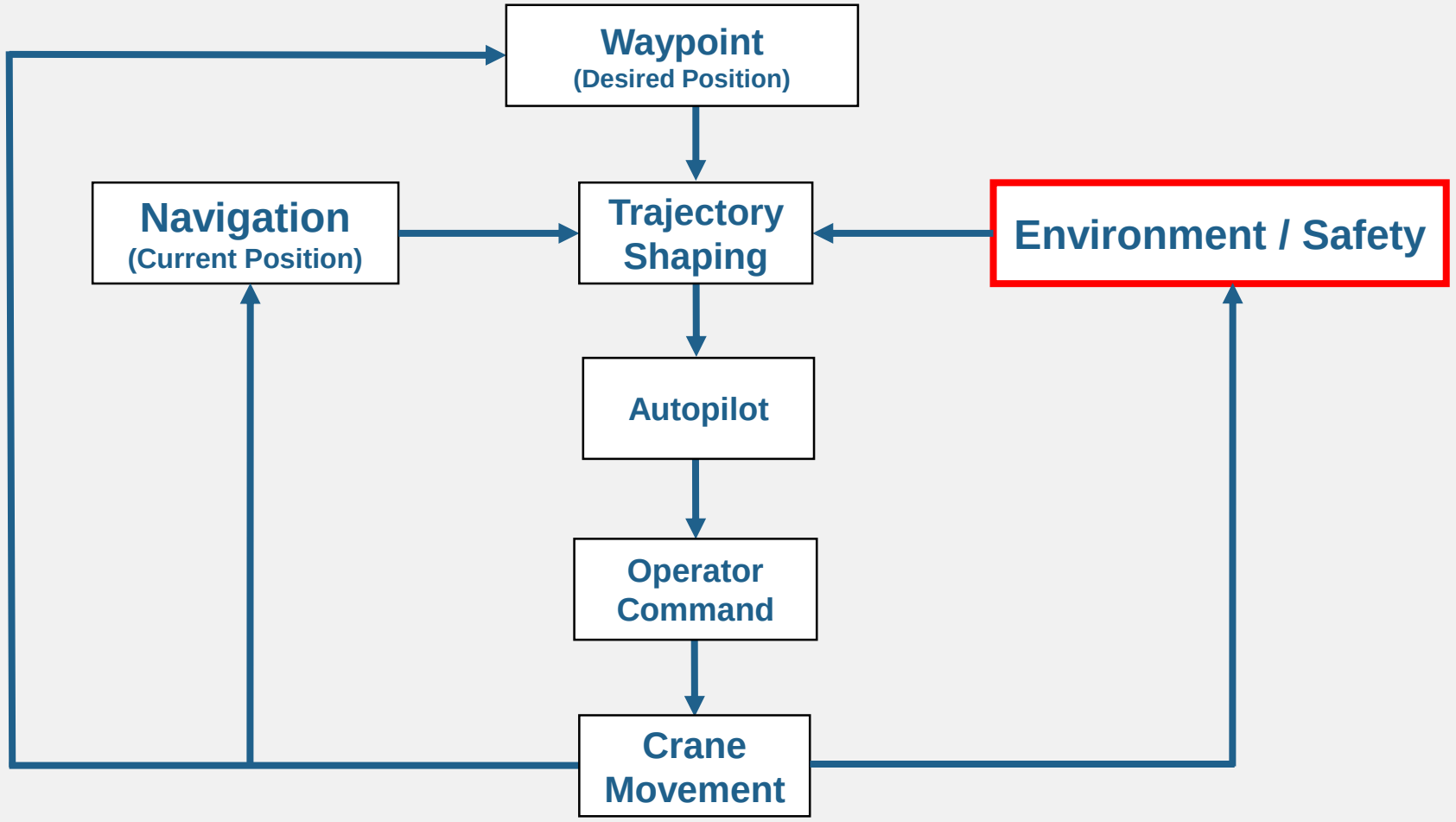
Waypoints / Desired Position

GPS Transceiver



Remote Controller

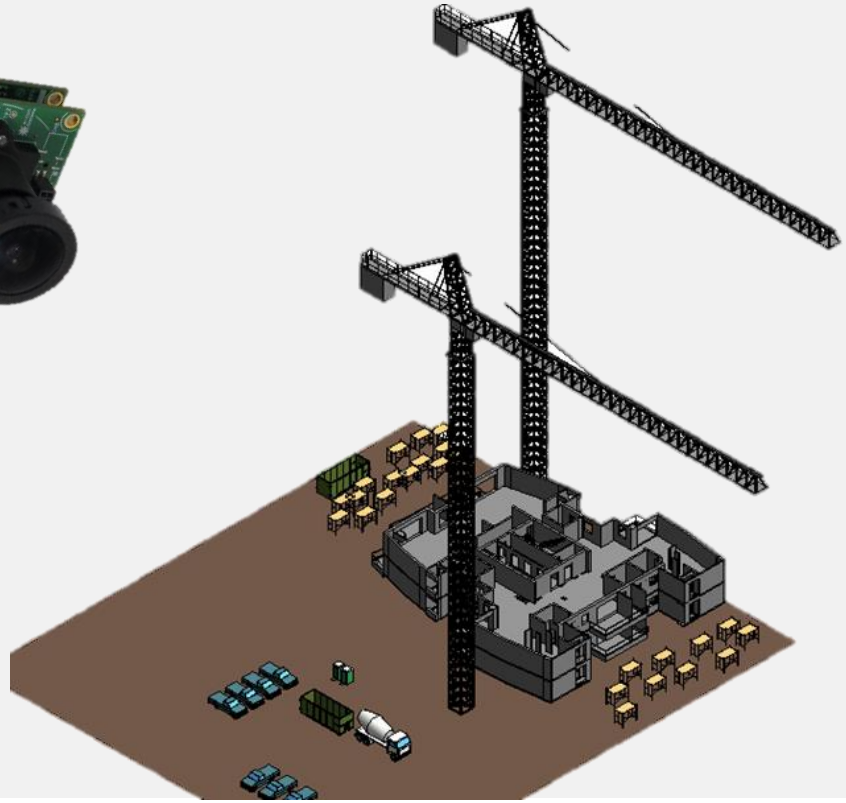
Top Level Block Diagram



Environment & Safety

Cameras

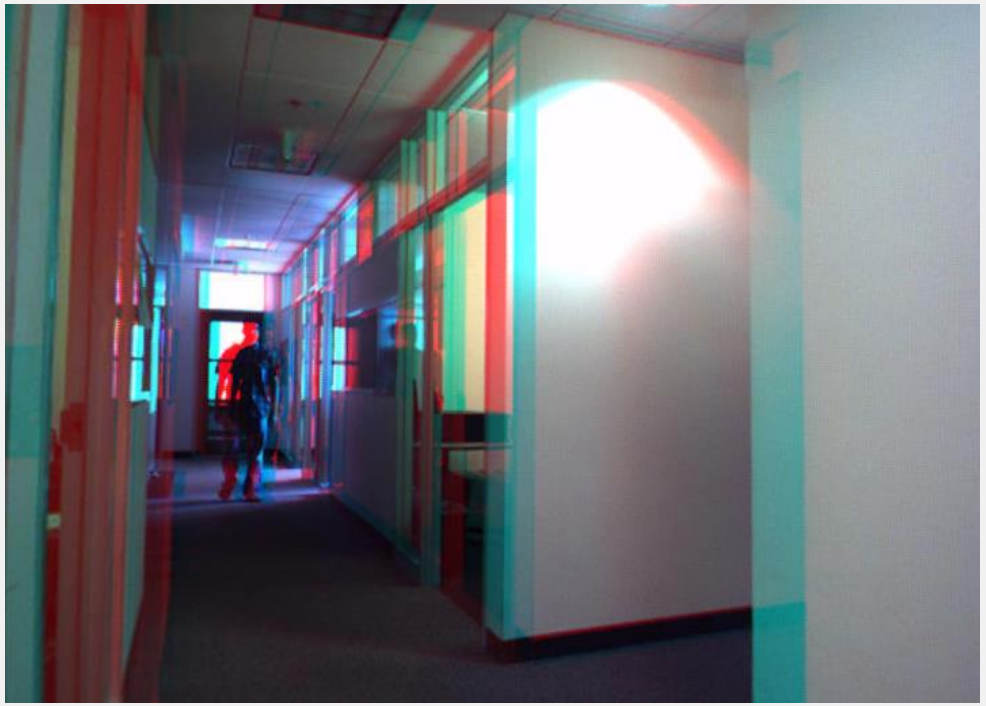
BIM



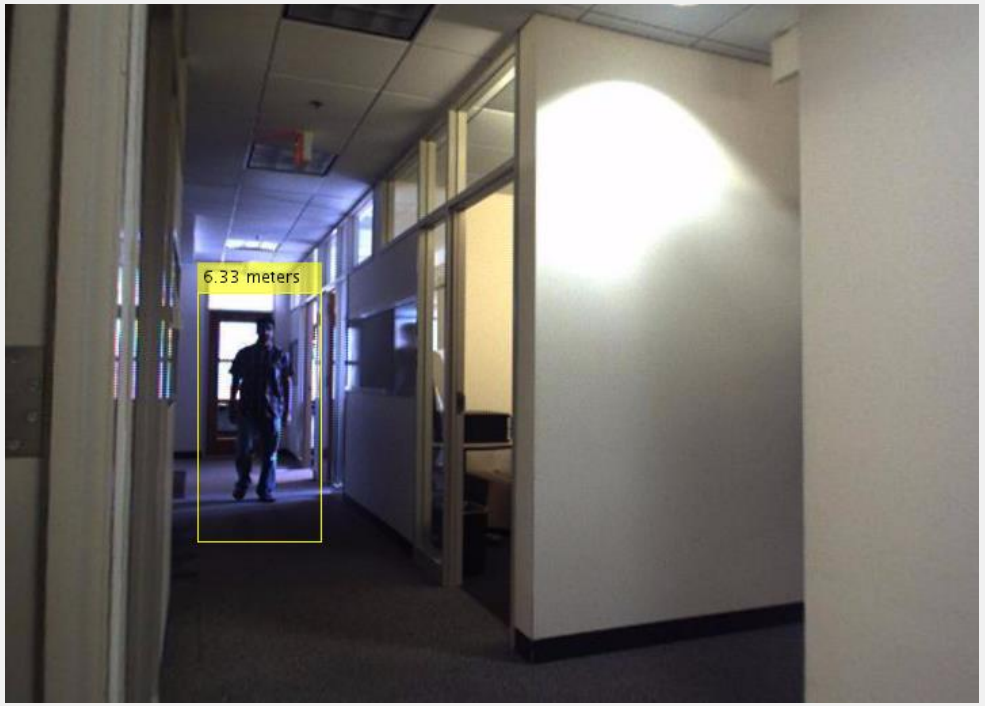
Ultrasonic Sensors

Environment & Safety

Stereo Images



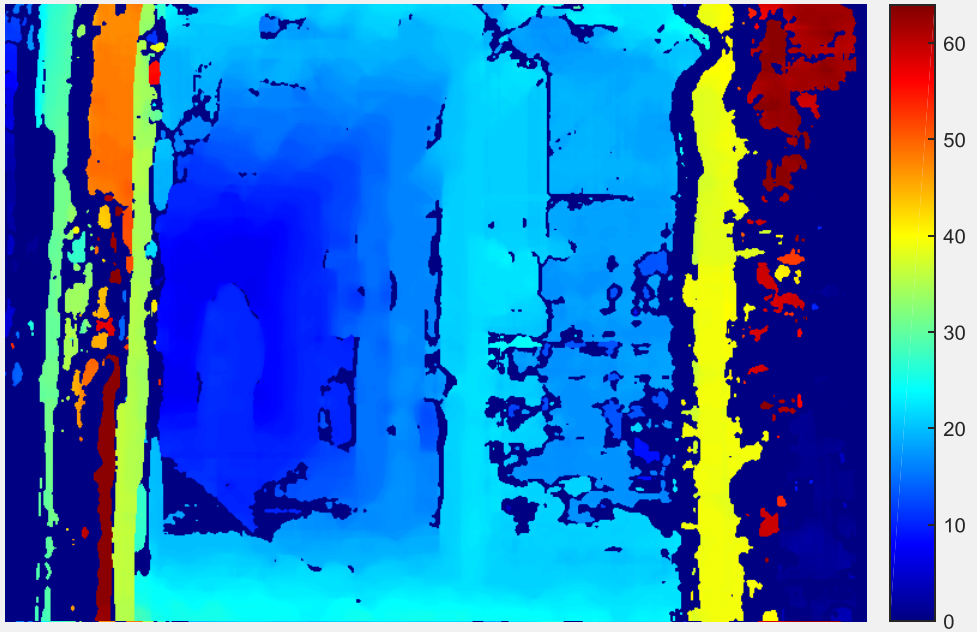
Human detection



Environment & Safety

3D Reconstruction

Depth View



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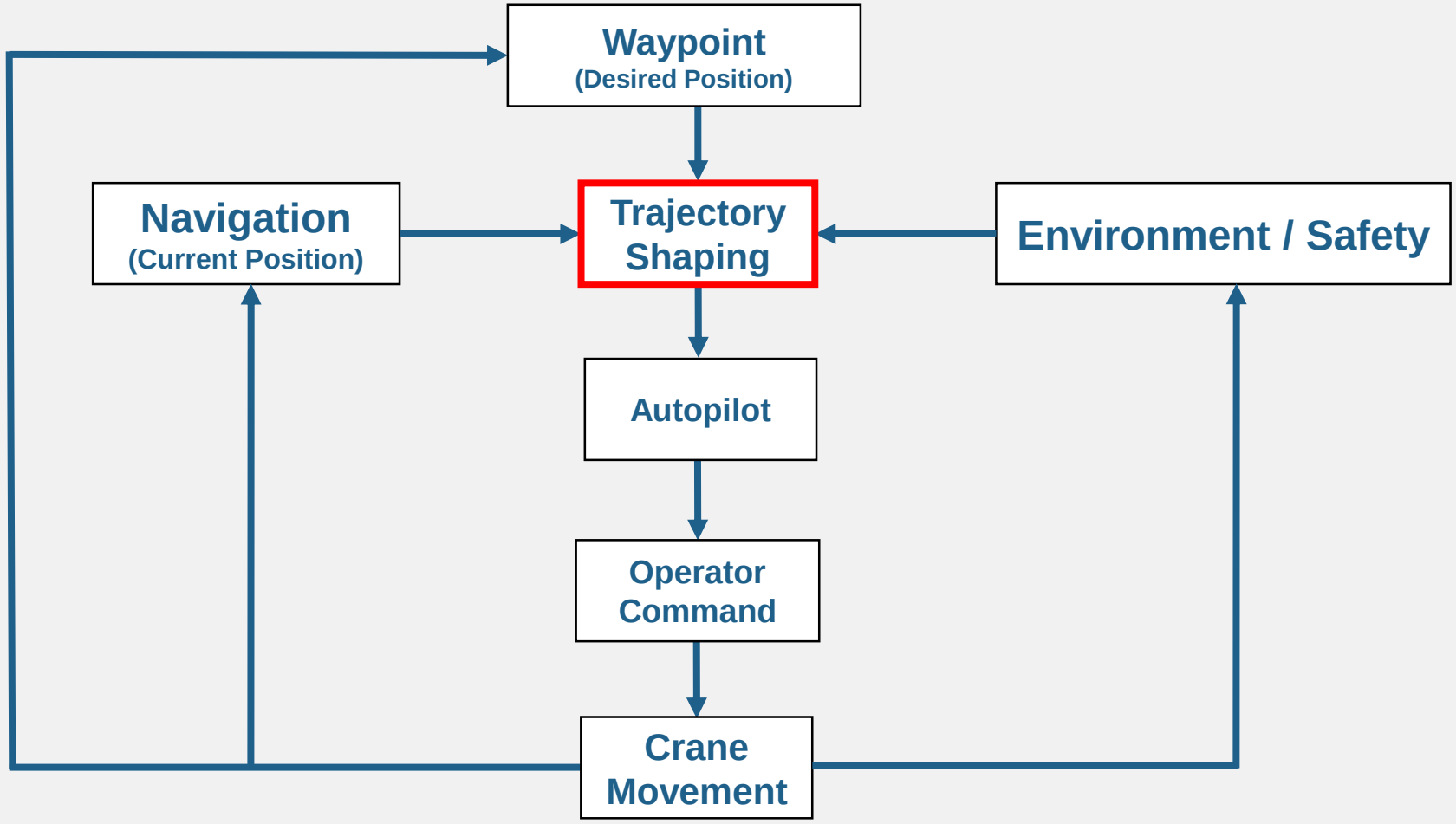
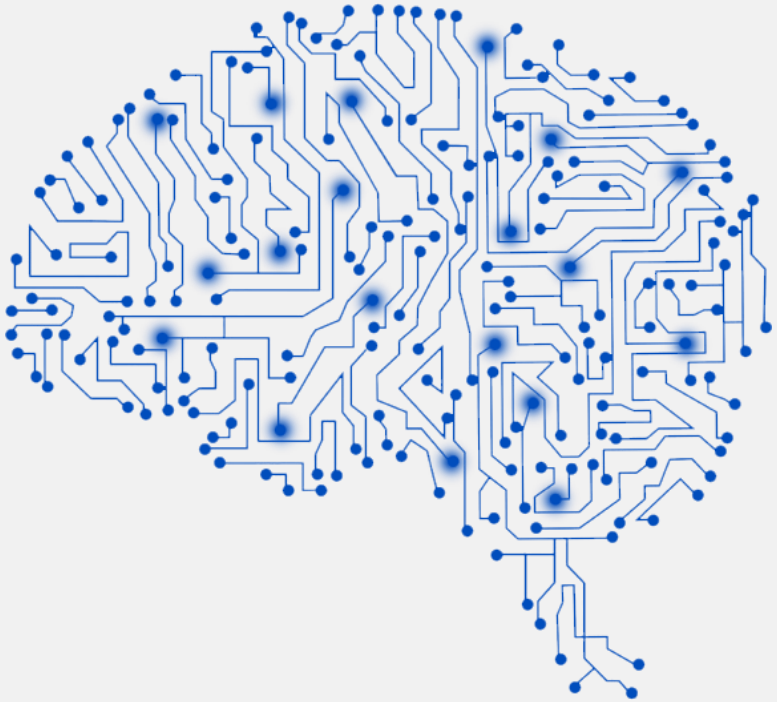


Trajectory Shaping

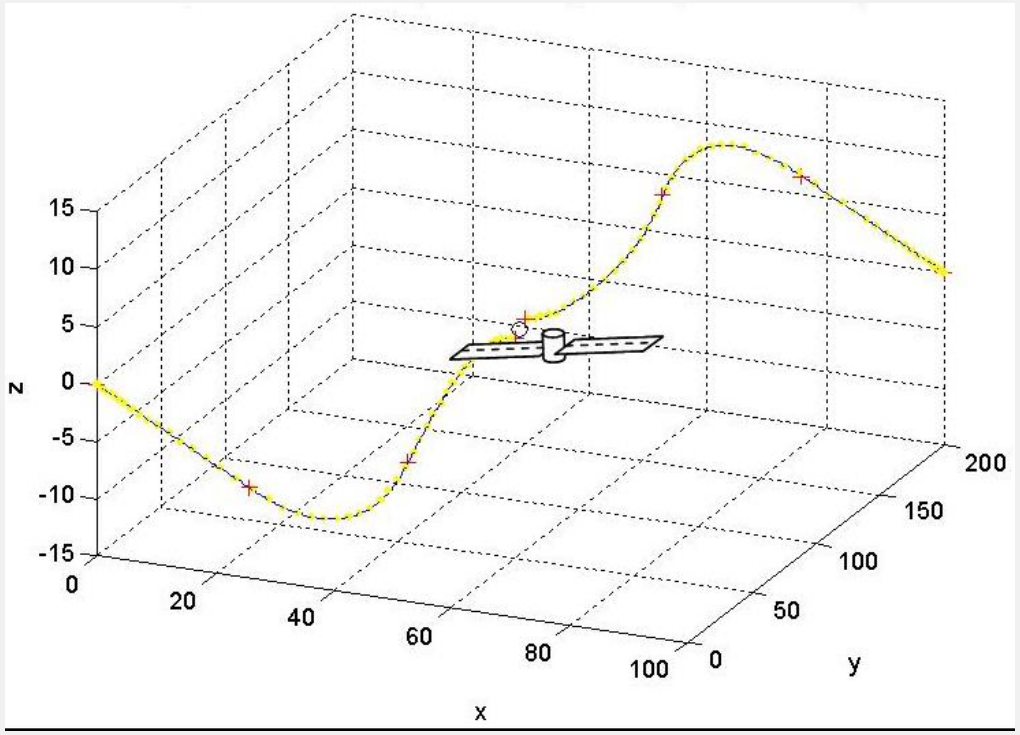
Uses the entire inputs to yield the best

Trajectory in manners of safety and efficiency



Trajectory Shaping

Unique algorithms adopted from the Missiles Industry



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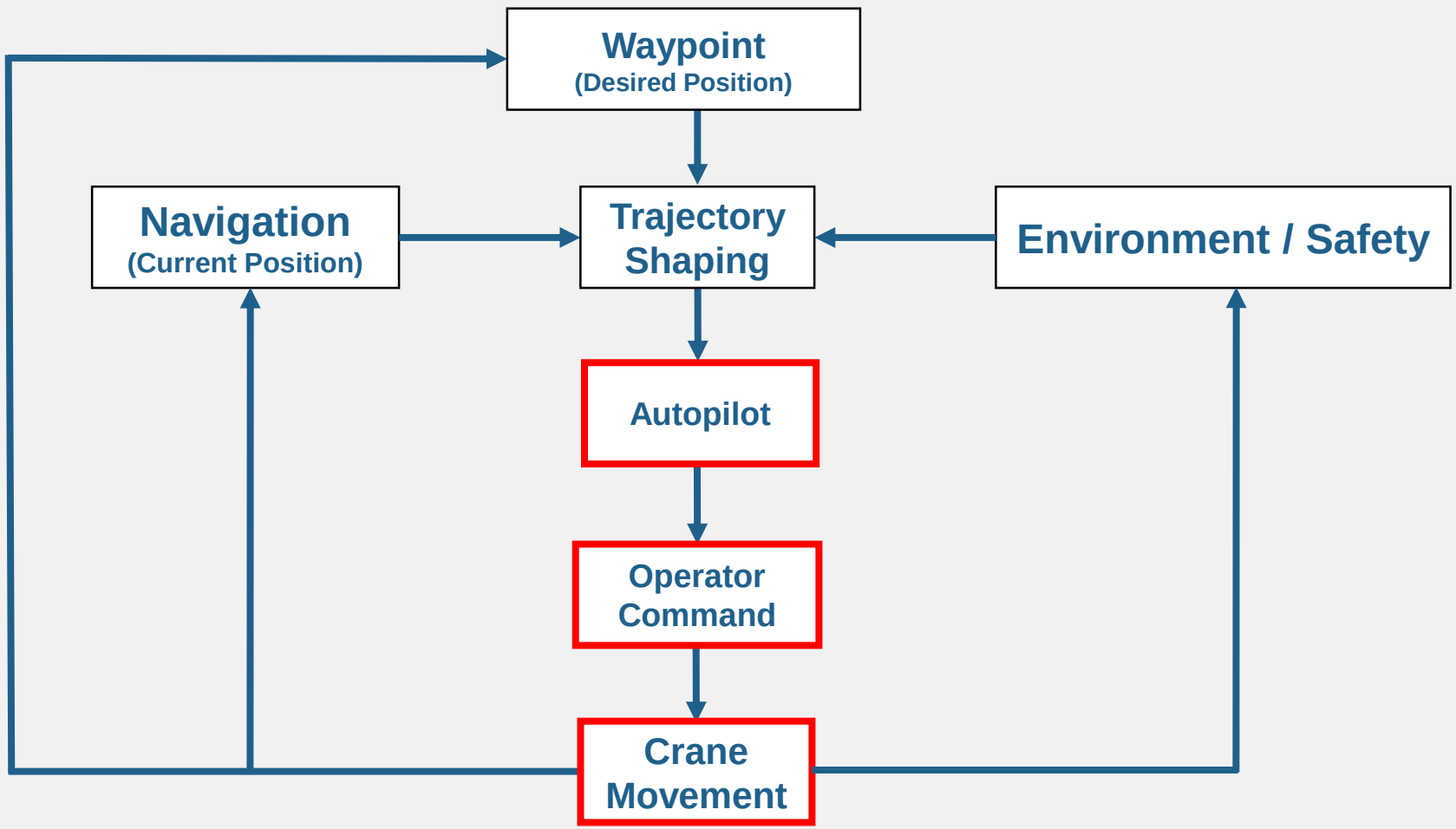
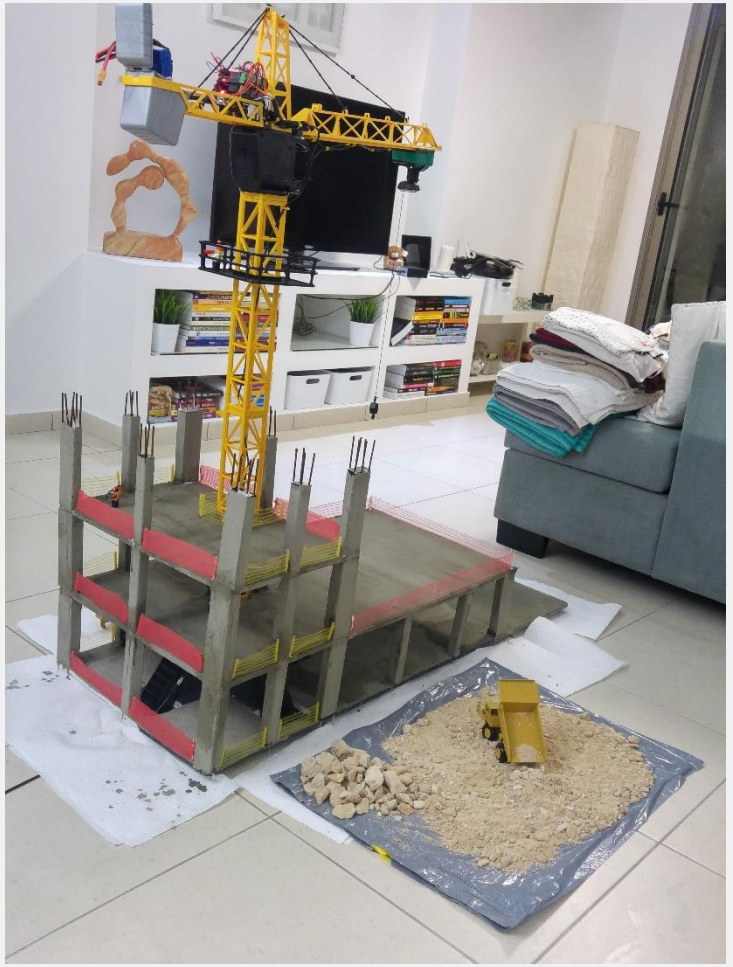


Small Scale Prototype

What do you need to build a small scale tower crane prototype?



Small Scale Prototype

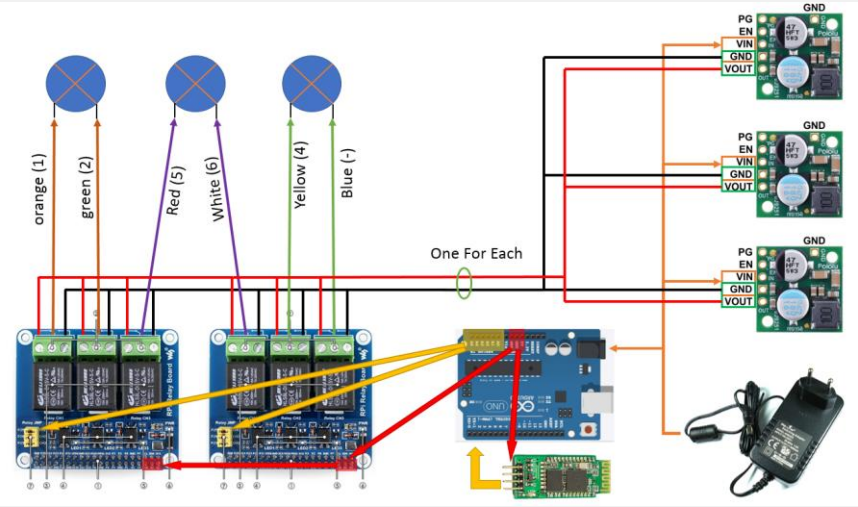
1. Get a small scale crane

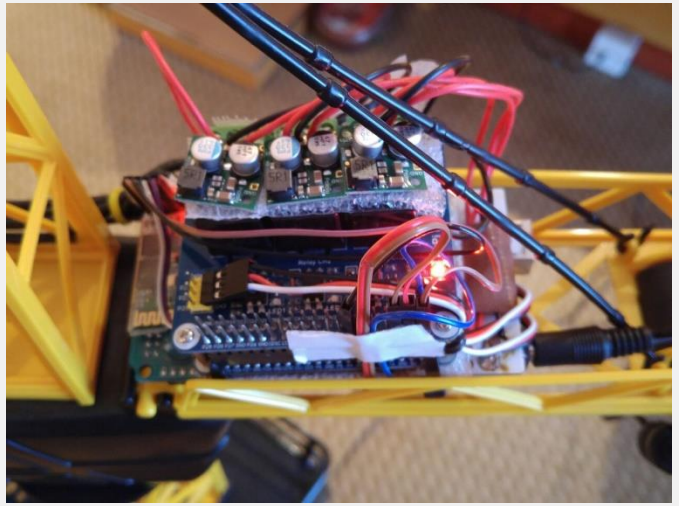
Small Scale Prototype

1. Get a small scale crane
2. Remove original wired remote controller

Small Scale Prototype

1. Get a small scale crane
2. Remove original wired remote controller
3. Design and Install our wireless controller



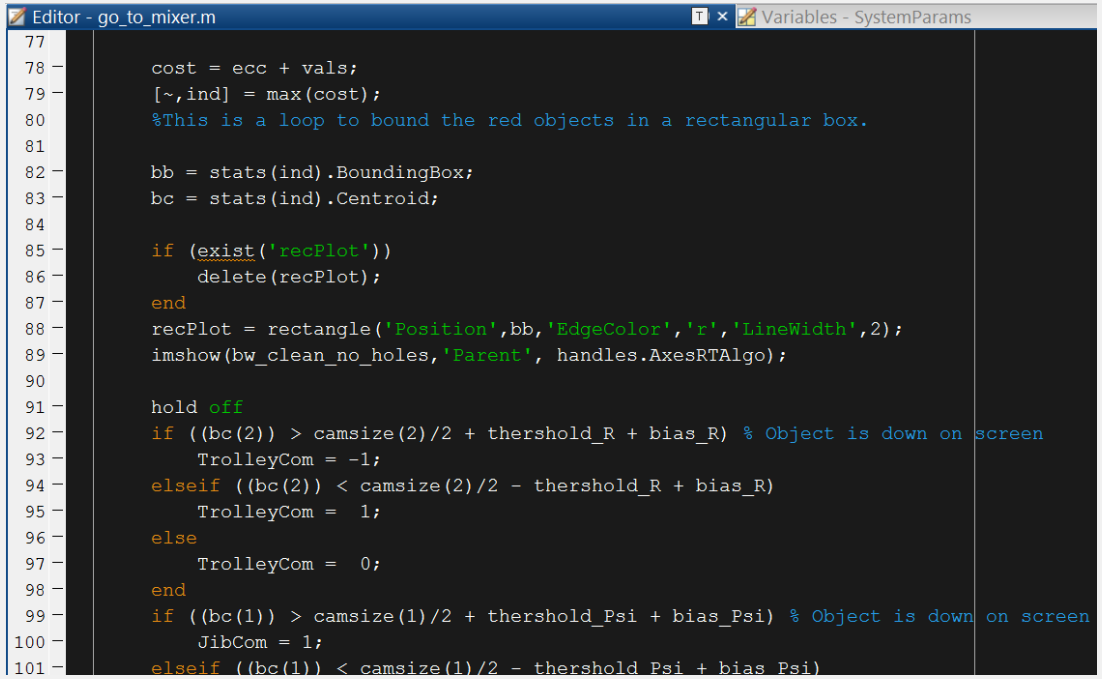


Small Scale Prototype

1. Get a small scale crane
2. Remove original wired remote controller
3. Design and Install our wireless controller
4. Equip the trolley with a camera

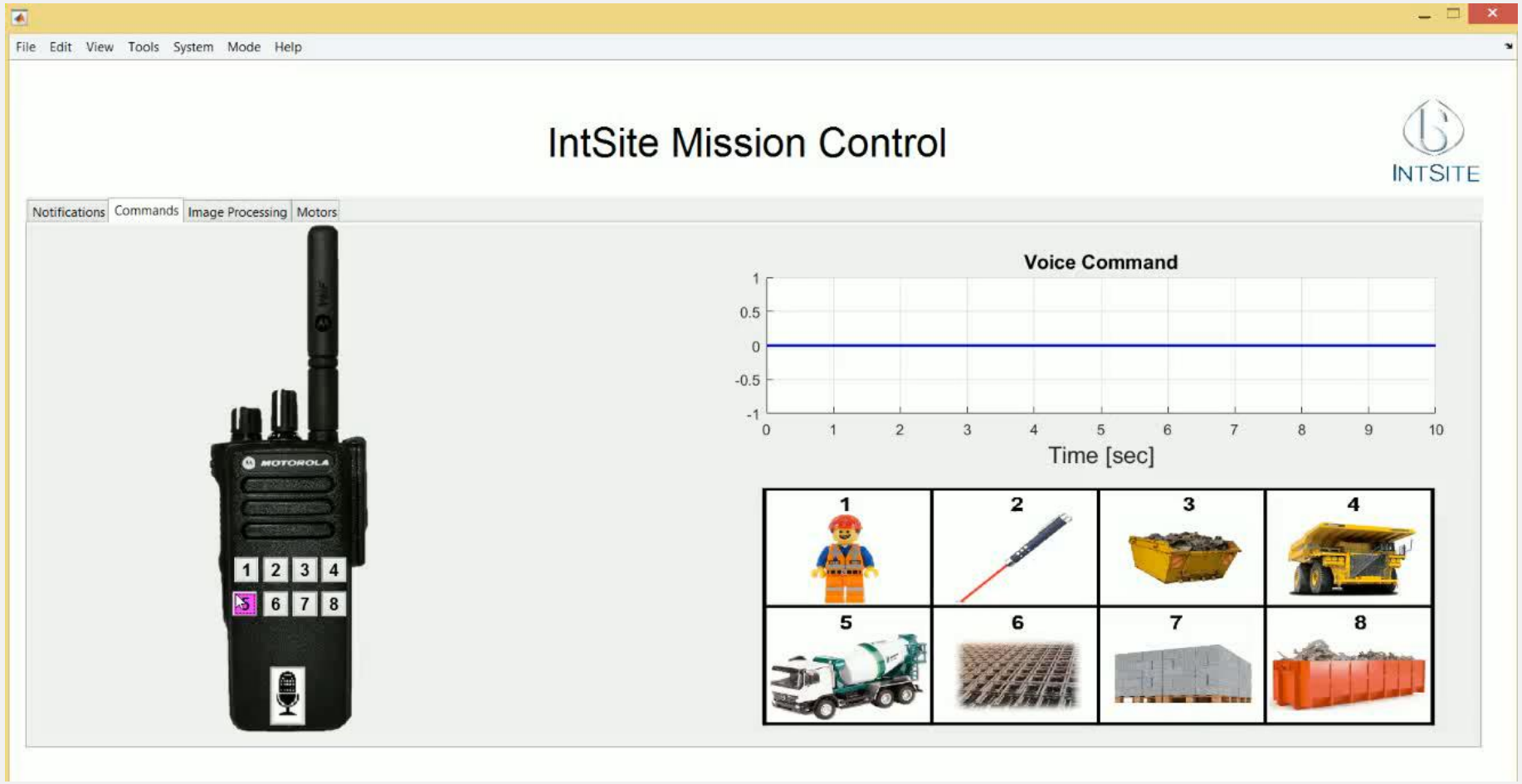
Small Scale Prototype

1. Get a small scale crane
2. Remove original wired remote controller
3. Design and Install our wireless controller
4. Equip the trolley with a camera
5. Coding…



Live Demo

Live Demo


File Edit View Tools System Mode Help
IntSite Mission Control
INTSITE
Notifications
Commands
Image Processing
Motors
MOTOROLA
1 2 3 4
5 6 7 8
Voice Command
1
0.5
0
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Time [sec]
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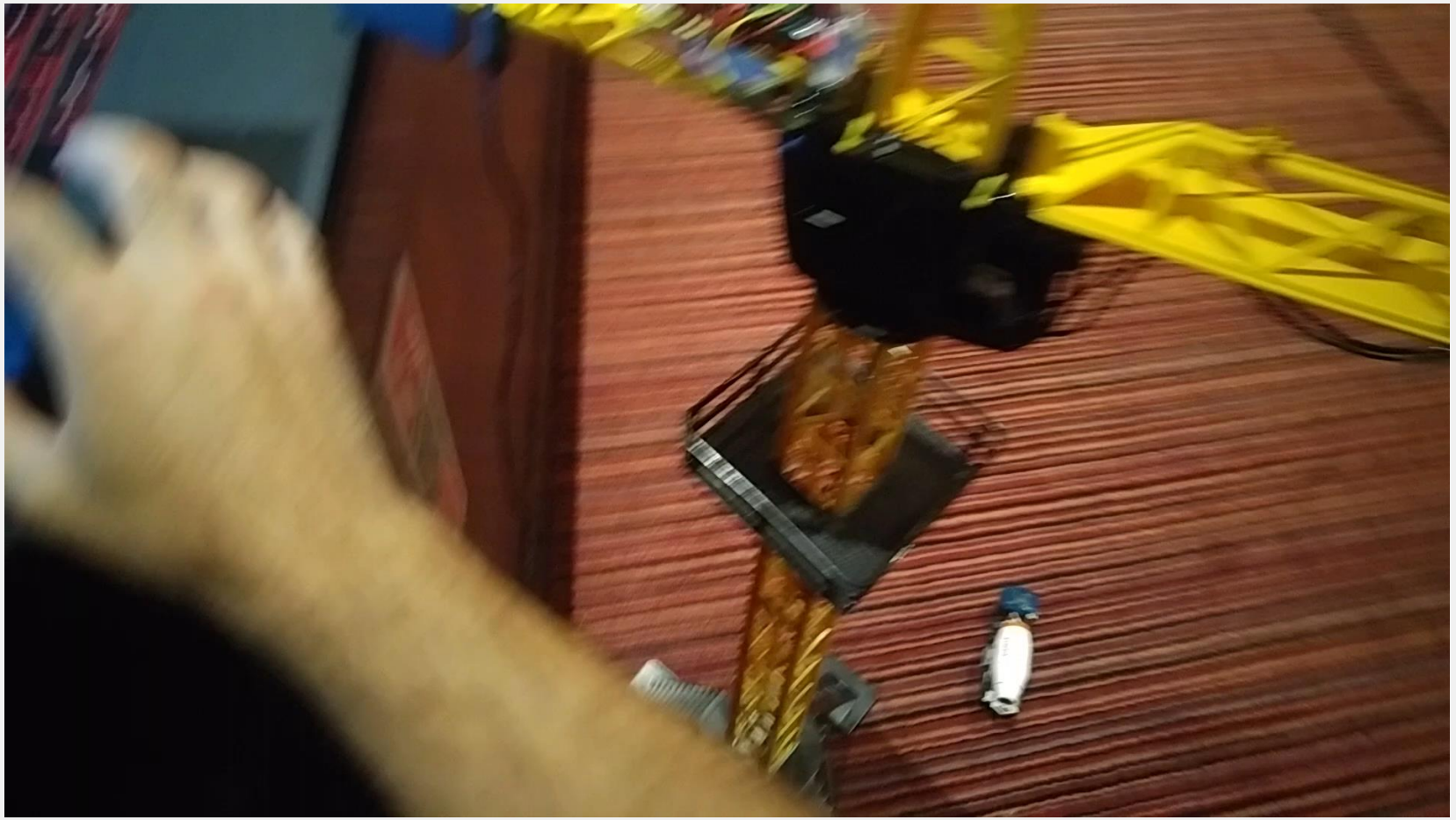
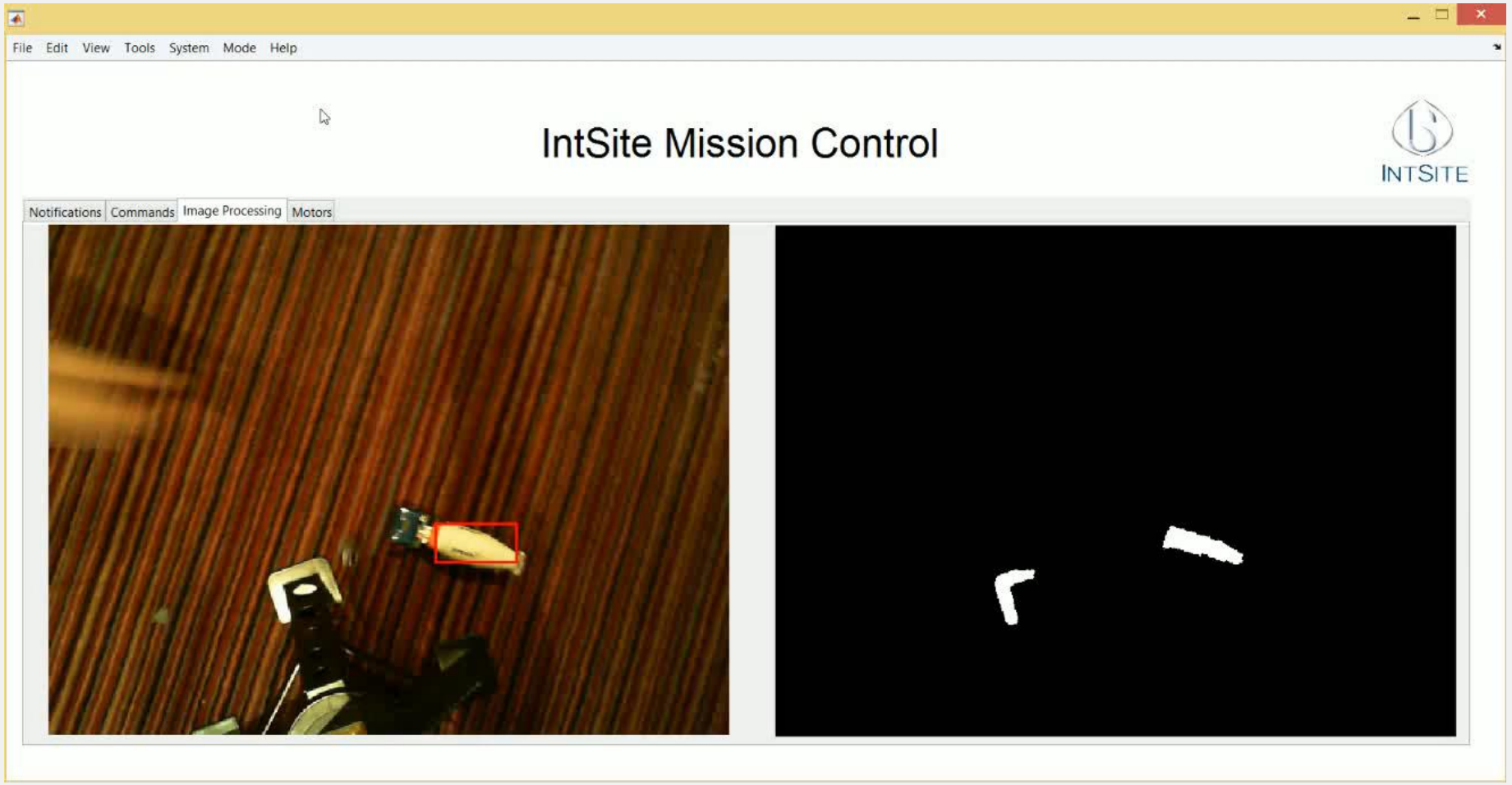
7
8

Live Demo



Live Demo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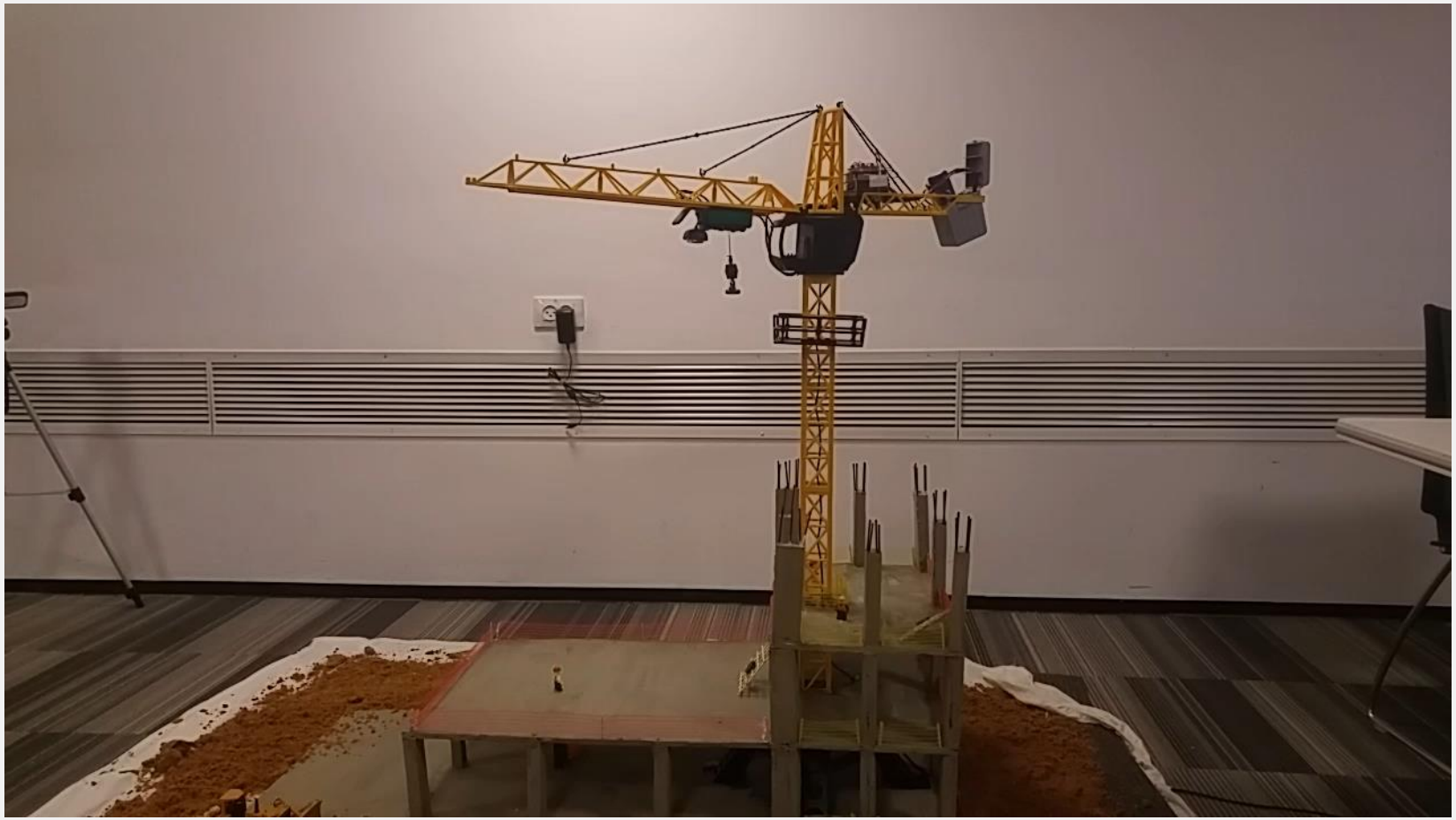
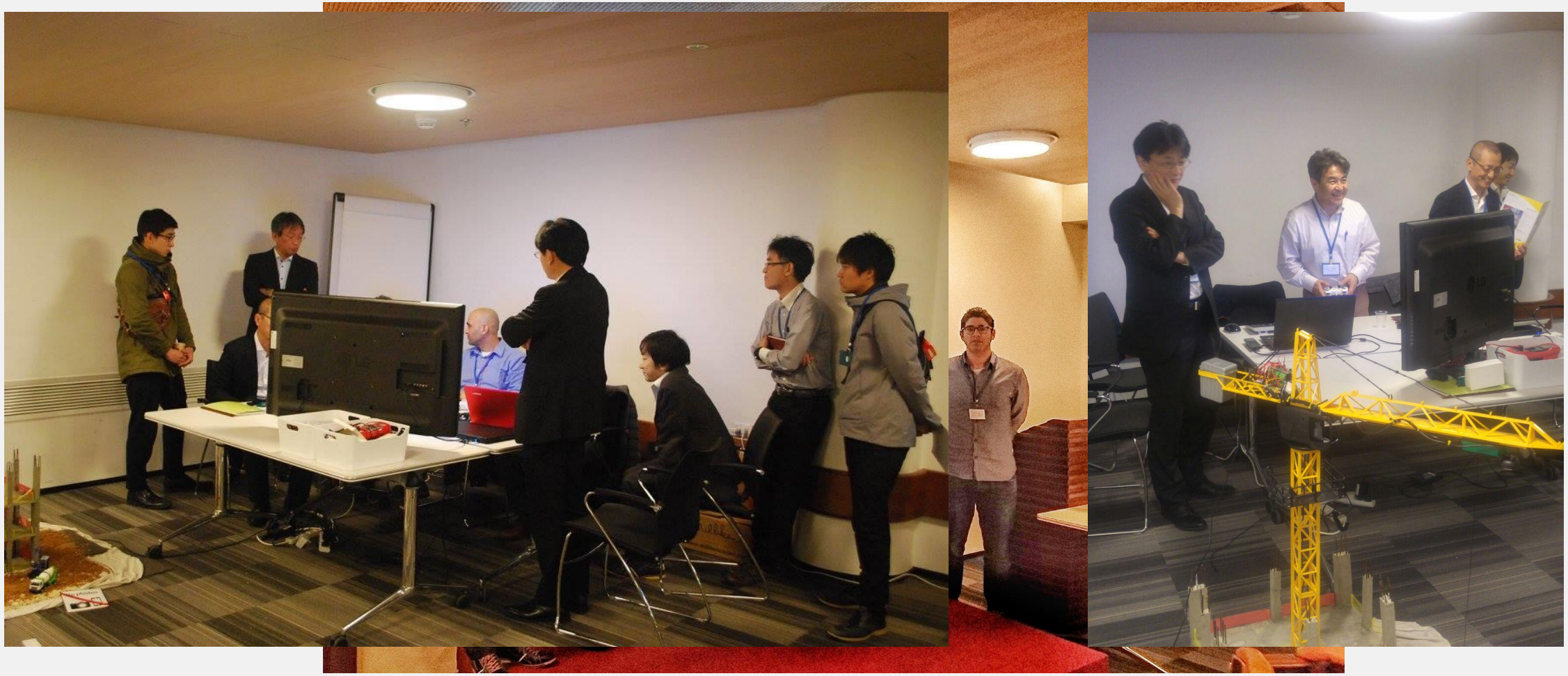
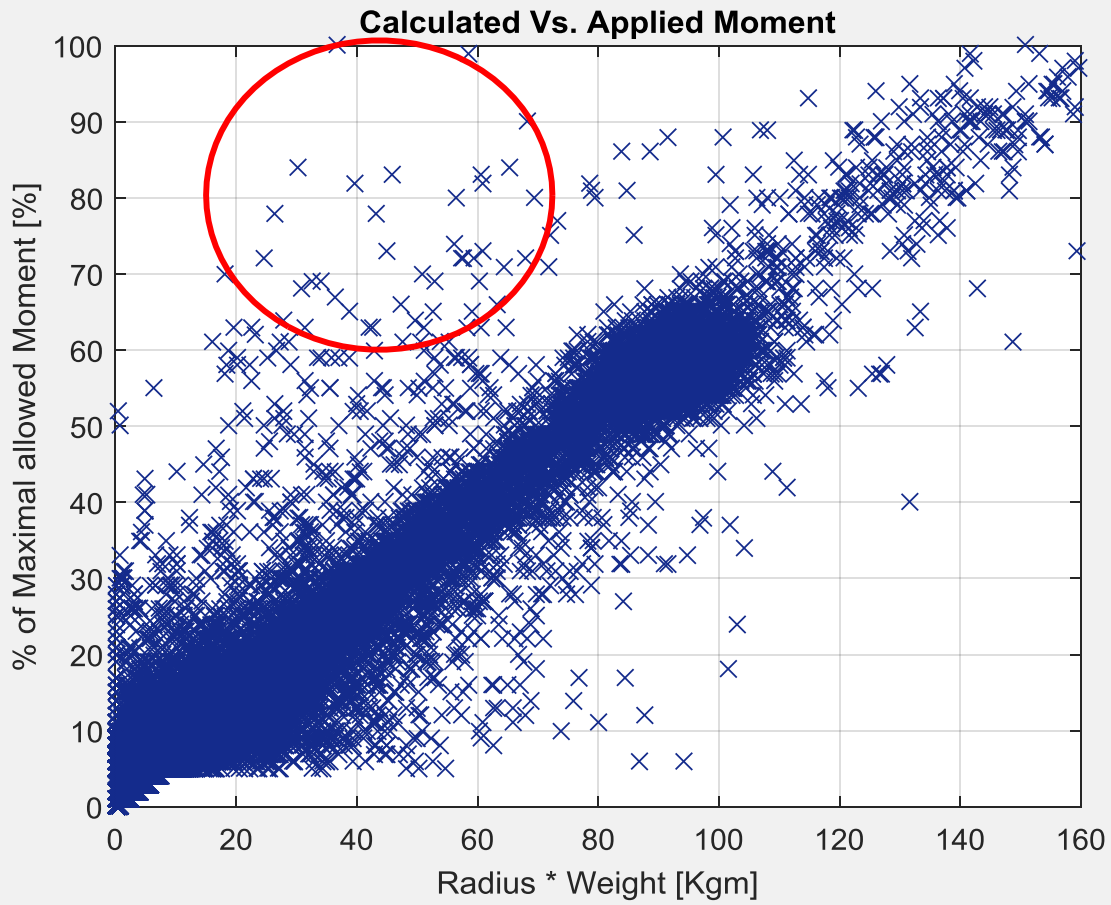


Construction Hackathon Winners



Full Scale Prototype

1. Equipped tower cranes with sensors
2. Pre-seed Fundraising



Partnerships

?

IntSite

Construction Technologies

Mor@IntSite-AI.com

Mor Ram-On