

HONDA
The Power of Dreams

How we move you.
CREATE ► TRANSCEND, AUGMENT

Honda Solution Systems

**HARNESSING AI, IOT & AUTONOMOUS MACHINES
TO SOLVE INDUSTRIAL CHALLENGES**



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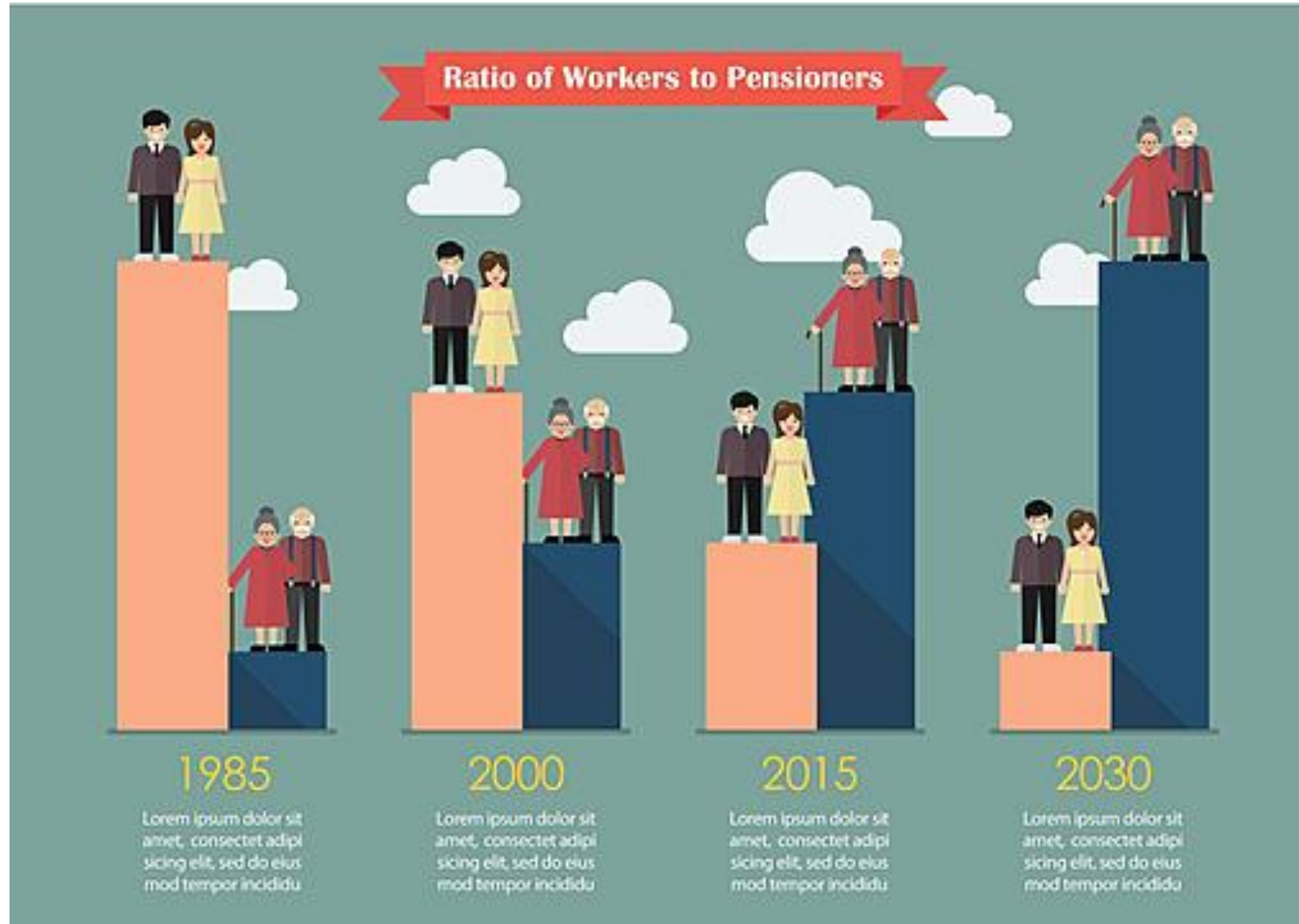


Solution System, R&D Business Unit

- **How demographic trends and work conditions are creating critical manpower gaps and the need for safe alternatives to manual labor**
- **How AI enables autonomous recognition of tasks and decision-making on job sites**
- **Cloud connection for task execution in different environments, and the seamless integration of the Honda Solution Systems into existing work operations**
- **AWM/MWM system for the L&G industry**
- **Next hurdles: rich-environment perception, cost and market recognition, before wider roll-out across the industries**

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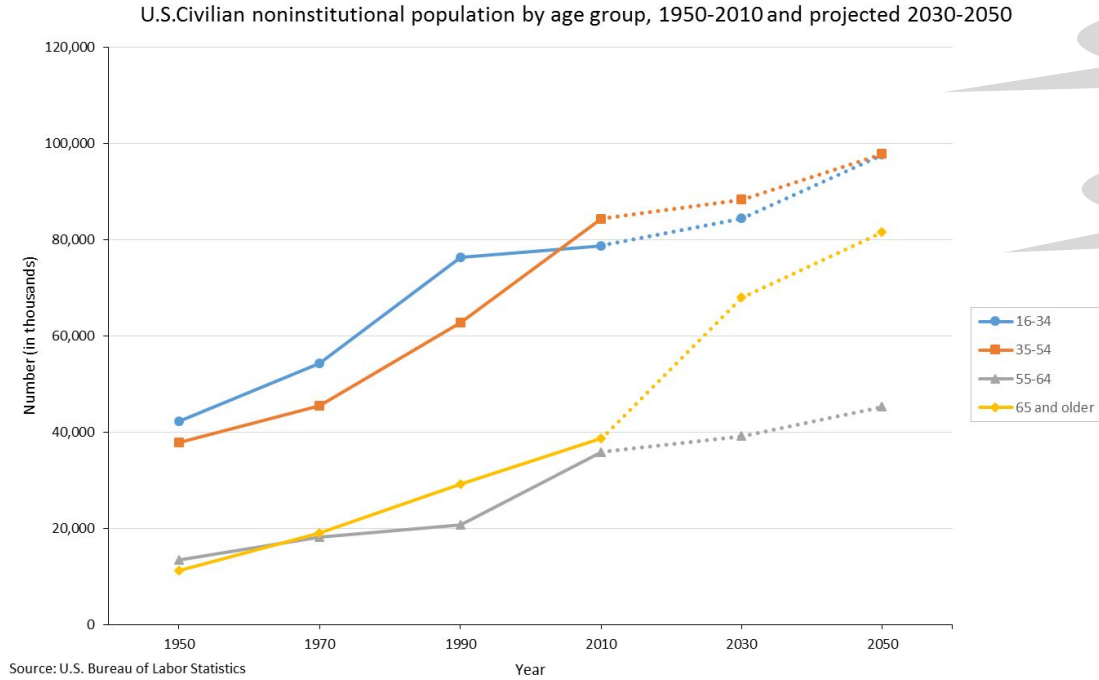
Demographic trends driving labor shortages



Demographic trends driving labor shortages

<https://www.cdc.gov/niosh/aging/data-research/index.html>

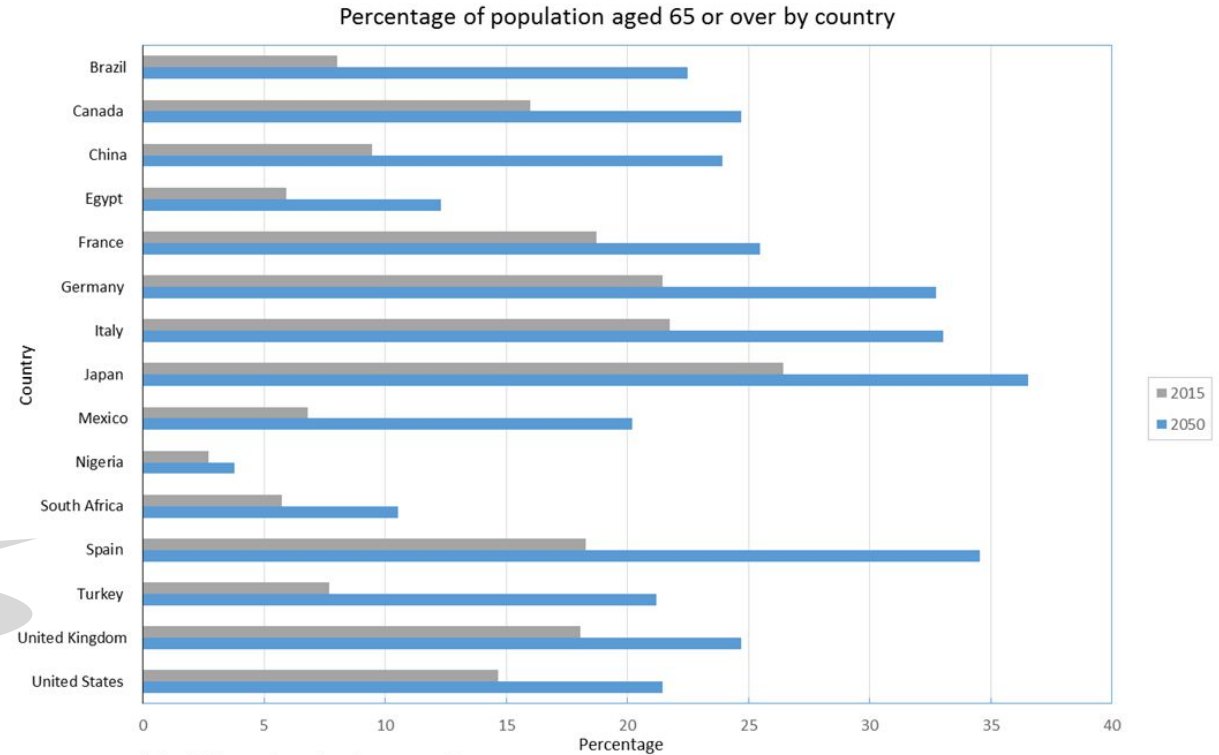
Data on the U.S. Older Workforce (as of 2025)



65 over, 117%/past 20 yrs.

457% since 1948

Not only in the USA



Work conditions amplifying gaps

risk of injury

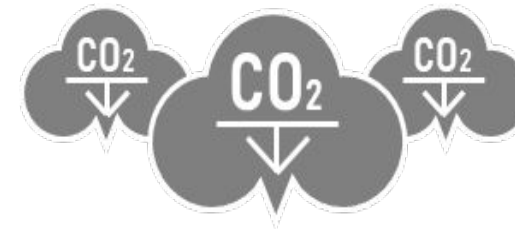


Noise, vibration

Labor shortage

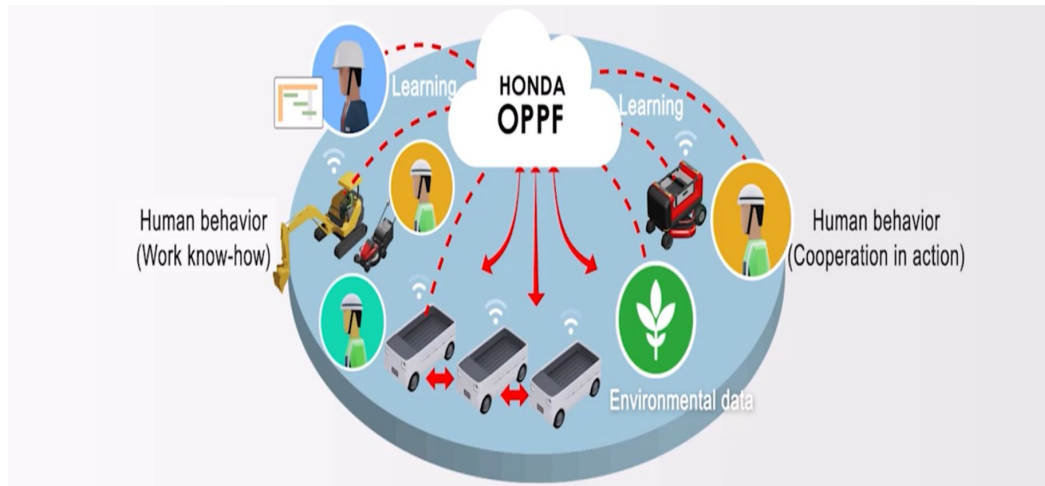


Social demands



Productivity, safe risks

Honda Solution Systems



**collaboration
between humans and machines**

Protect the safety of workers

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Perception



Task recognition



Decision-making

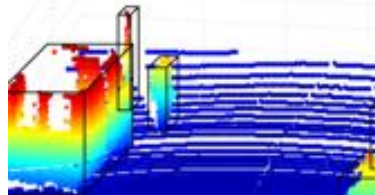
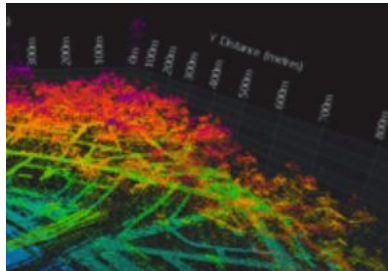
Solution systems autonomous drive, work

Task



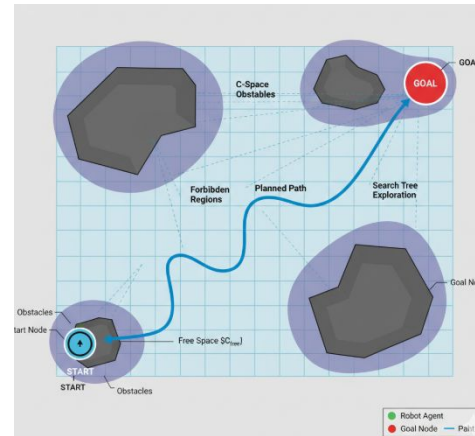
Contextual awareness

Computer vision

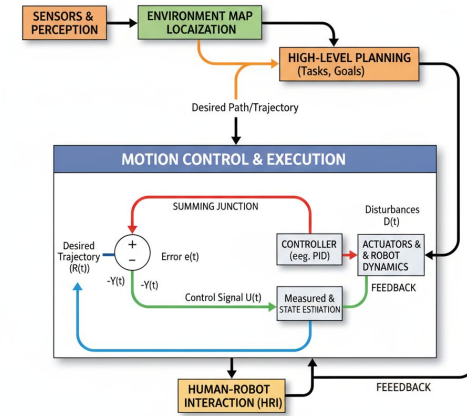


Detection

AI

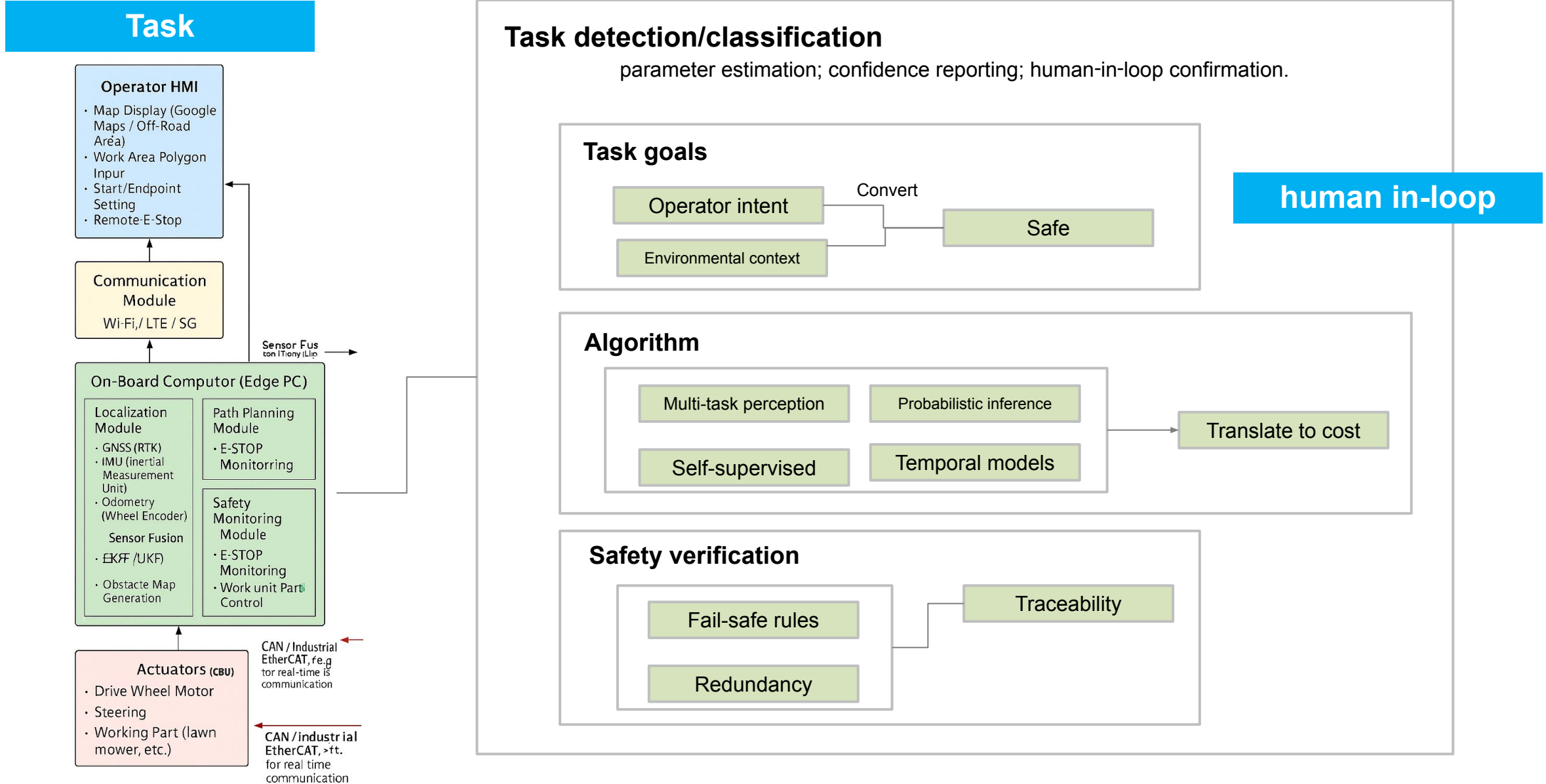


Situation map
Planning, decision making



Actuation

Autonomous drive, work design concept





Safety



Efficiency



Scalability

Data-driven ecosystem

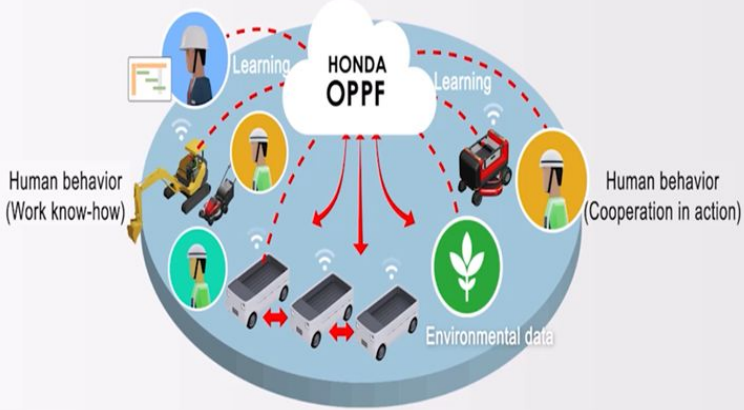
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Seamless integration of the Honda Operation platform



Exchange real-time data

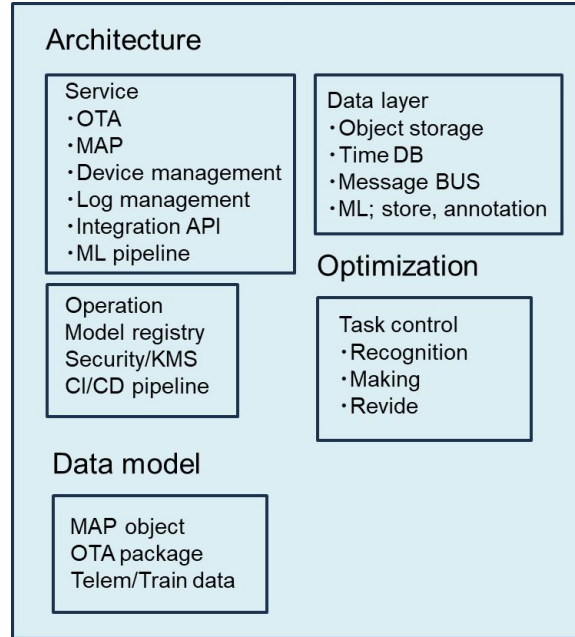
API



Adjust plans

Honda operation system design concept

**Honda
OPPF**



**"Cloud optimization
x Edge autonomy
x Safety fail-safe."**

Operation Platform

Communication and Cloud configuration

Bidirectional communication

Cloud PF

Task management service
Status DB
Optimization engine
Operator HMI

API control

API management

Data divide

Prioritize

Edge side

Unique ID

Battery management

AD control

Safety MCU

Communication fail

Swarm control

Work task optimization

Charging schedule

Real-time updates

Safety and operation

Emergency stop priority

Log collection

Monitoring UI

Diverse environments



Efficiency

Minimize downtime



Safety

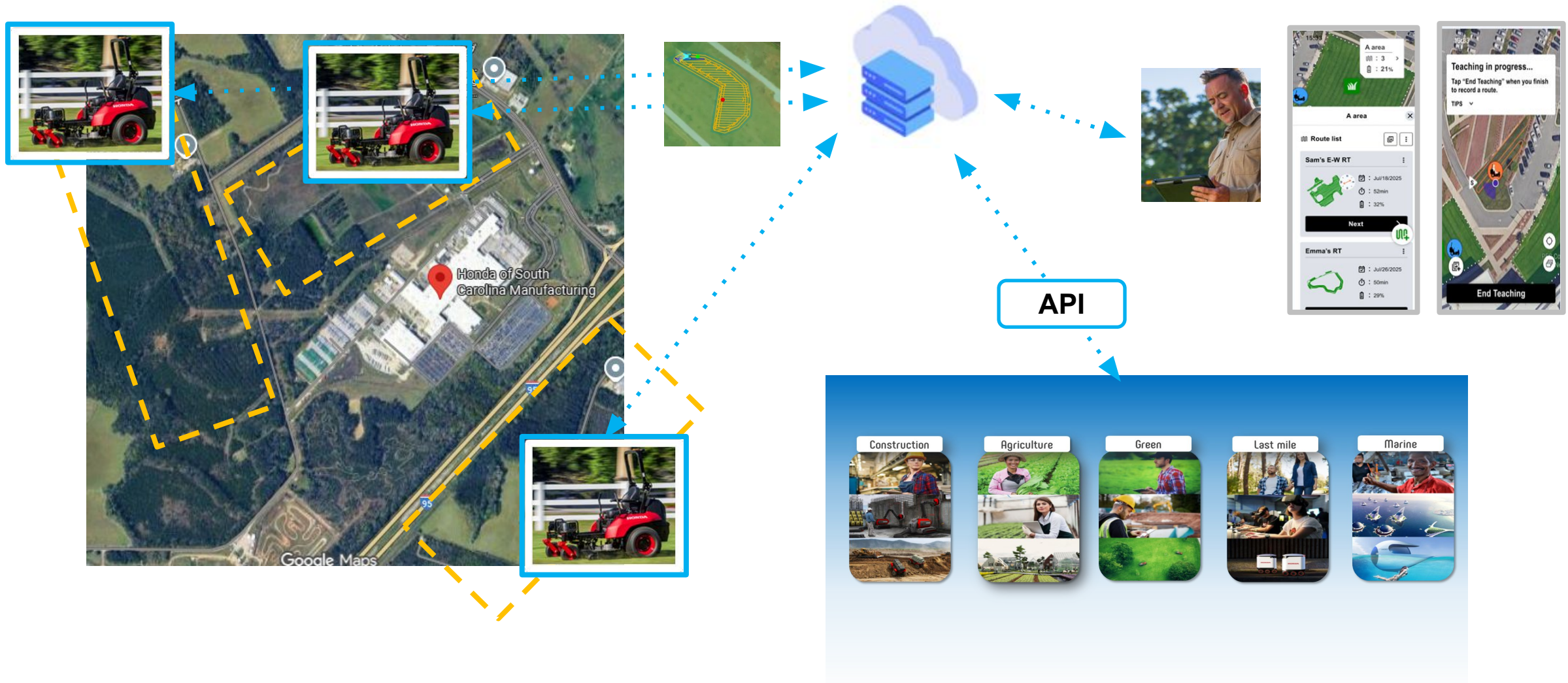


Flexibility

Hazard recognition
Included CS

Use case example

Honda Operation Platform



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Honda Autonomous/Manual Work Mower



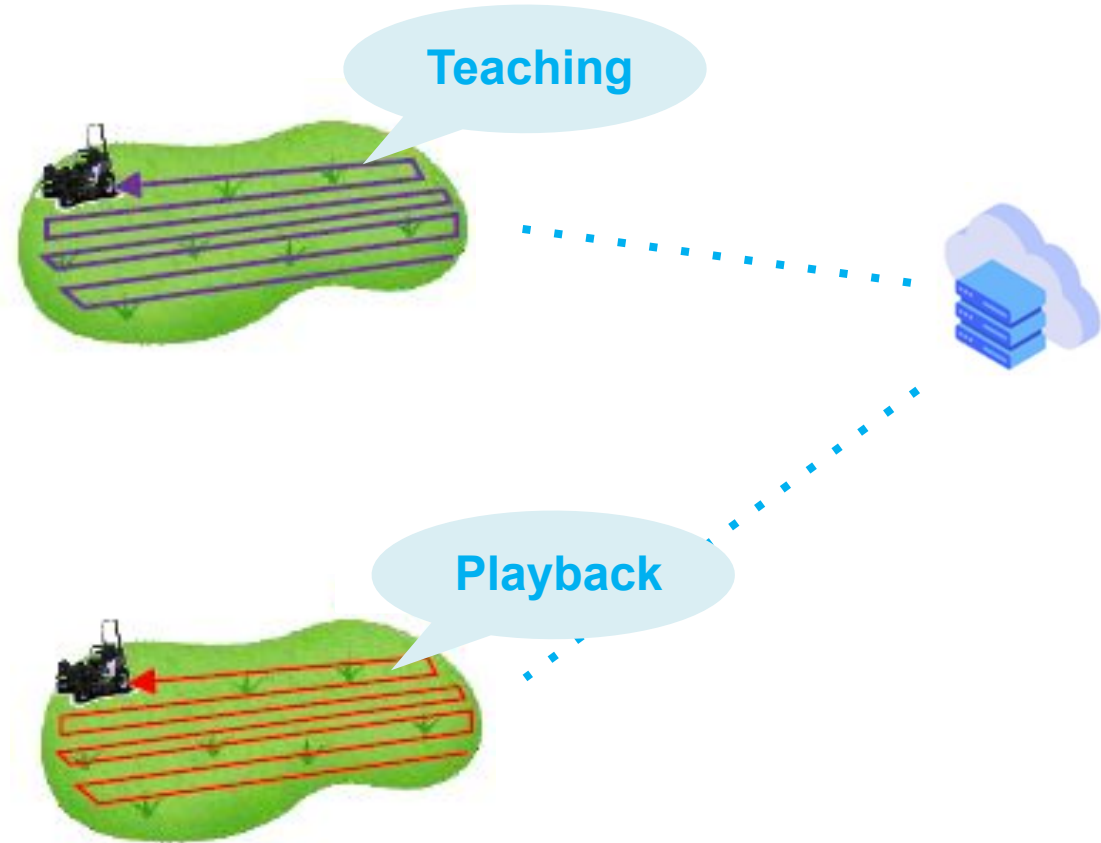
Honda Autonomous Work Mower



All electric

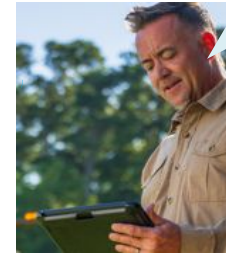


Autonomous drive & work

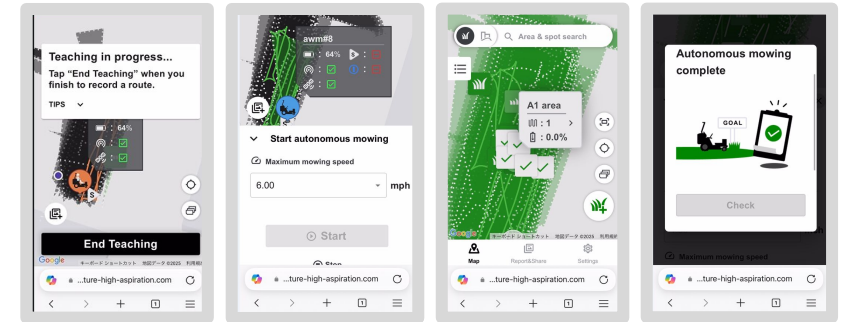


Honda Autonomous Work Mower

Honda Operation Platform



HMI



Safety function

Localization



Planning

Obstacle detection

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Hurdle 1, Rich-Environment Perception



Why not use autonomous car technology?



VS



No MAP

No traffic rules

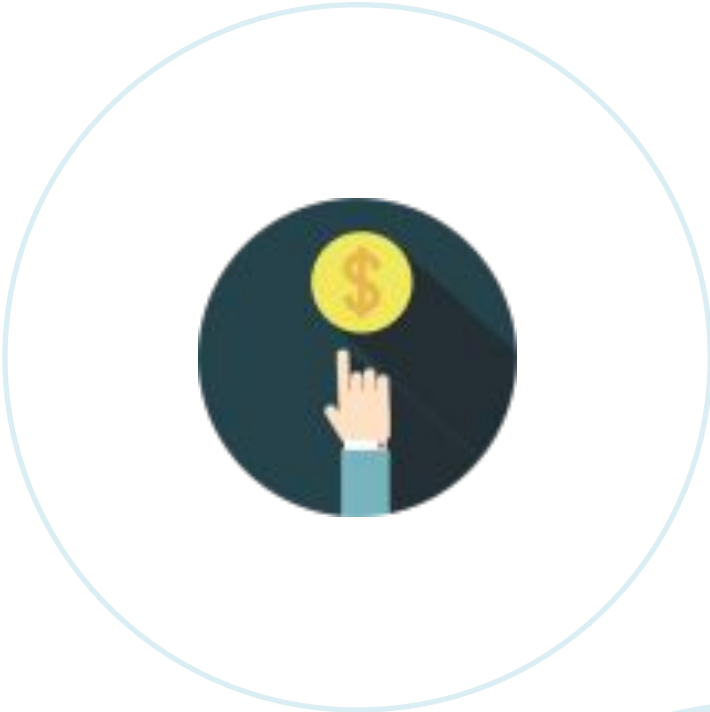
Ground change

With human

Not always Open sky

Natural obstacles

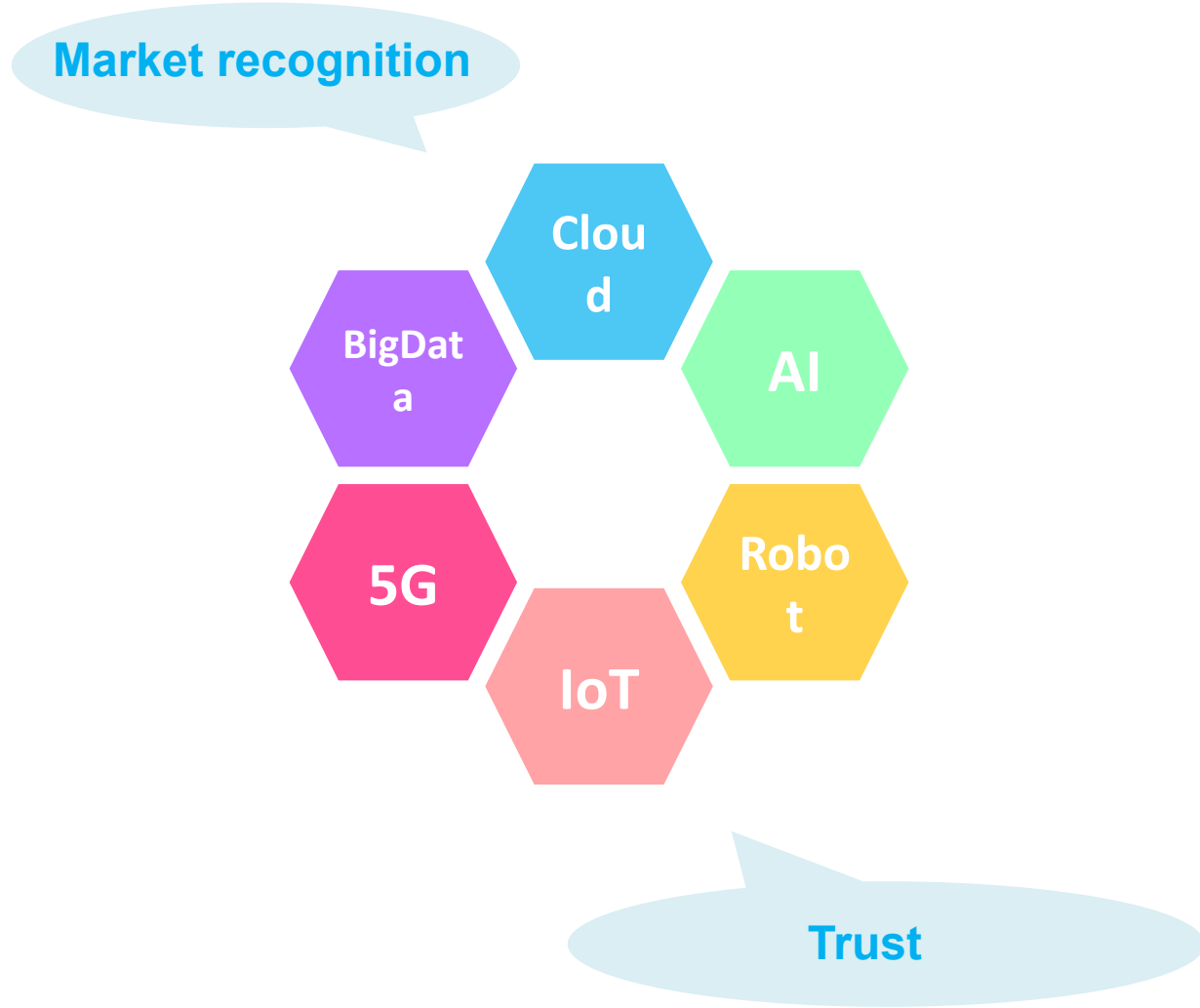
Hurdle 2, Cost challenge



Value for money



Hurdle 3, Market recognition





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