

THE ROLE OF A RESEARCH ORGANIZATION IN FACILITATING MARKET UPTAKE OF AI, DATA AND ROBOTICS IN I&M

Tsampikos Kounalakis & Thomas Kroman



INNOVATION ENGINE

From strategy to implementation of robot and automation solutions with our tested innovation engine



ROADMAP

We develop a strategic roadmap and catalogue with viable potentials



PROOF OF CONCEPT

We sketch the contours and validate key technologies



PILOT

We "power up" and demonstrate the full system



IMPLEMENT

We get the solution to work in collaboration with industry partners





ROADMAP



PROOF OF CONCEPT



PILOT



IMPLEMENT

KEY ACTIVITIES

Build business and domain insight and collect data

Identify focus areas with high impact

Scout existing and emerging tech

Ideate possible solutions

Develop initial business case and high-level plan

Analyse data, critical risks and assumptions

Investigate and verify existing solutions *or* develop new concept with feedback (build > measure > learn)

Visualise using mock-ups, 3D model, simulation, etc.

Design full-scale pilot for demonstration, optional prototype/process simulation

Set test program, carry out pilot, and analyse results

Adjust design prior to implementation

Give input to business case, procurement strategy, suppliers

Procurement support and assessment

Advice during implementation e.g. including FAT/SAT test

Support smooth implementation

Train employees and assess new processes, safety, internal procedures, competences, systems, data, etc.

OUTCOMES

Catalogue of opportunities and possible solutions

Recommendations for decision making

A high-level plan to implementation

Validated recommendations and basis for decision making

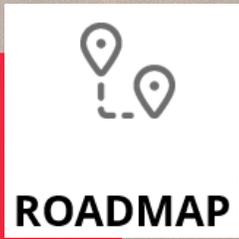
An updated implementation plan with critical risks mitigated

Full-scale solution with proven and tested architecture

Decision basis for implementation and roll-out

Independent advice to ensure smooth implementation of the new solution





ROADMAP

WIND TURBINE PRODUCTION AND INSTALLATION MUST INCREASE 3-FOLD TO MEET 2030 TARGETS

Together with large, international wind turbine manufacturers, DTI has drawn up the technology roadmap & demonstrated prototypes for how to implement robots in blade manufacturing, paint-processing and large-component nacelle assembly.



INFRASTRUCTURE INSPECTION – INSPECTING THE GREAT BELT BRIDGE

An autonomous drone operation from DTI was explored and shown to be a viable solution for inspecting an 18-kilometer bridge, even under severe wind and weather conditions.



PROOF OF CONCEPT





**PROOF OF
CONCEPT**

INFRASTRUCTURE INSPECTION – INSPECTING THE FENCE OF ODENSE'S AIRPORT

DTI, in partnership with the local airport, has showcased a future alternative solution for infrastructure inspection. The demonstrated solution leverages the capabilities of Boston Dynamics' Spot, AI-based visual inspection models, and 5G technology that facilitates remote operation.



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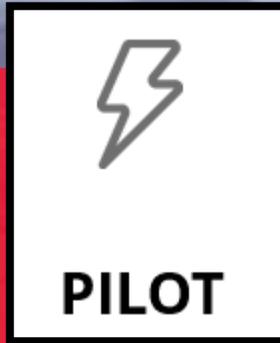
URBAN ROBOTICS AND THE DEPLOYMENT OF I&M SOLUTIONS.

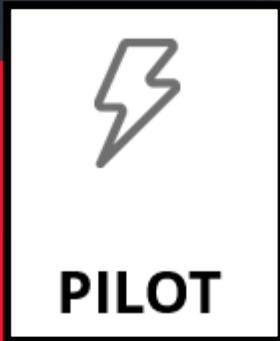
Under the RIMA initiative, DTI has played a mentoring role for the GUMBOT project partners, who are working on a solution for gum removal from pavements. DTI has provided guidance on the future deployment needs of robots navigating and performing Inspection & Maintenance (I&M) operations in public spaces that are also used by people.



INSPECTION OF POWER LINES USING AUTONOMOUS DRONES.

Within the framework of RIMA, DTI has served as a mentor to the TANGO project partners, who have developed a solution for the autonomous inspection of power lines. DTI has provided assistance regarding the requirements and considerations for certifications of autonomous drones within the EU.





WIND TURBINE I&M OPERATIONS USING SPECIALIZED ROBOT CRAWLERS

In the context of RIMA, DTI has acted as a mentor to the partners of the LADYBUG project, which has created a solution for the autonomous inspection of wind turbine blades. DTI has guided project partners on the requirements for Inspection & Maintenance (I&M) operations for wind turbines.





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THANK YOU.



Tsampikos Kounalakis
Research and Innovation Manager,
Ph.D
tsko@teknologisk.dk



Thomas Kroman
Product Manager
thkr@teknologisk.dk

