Pitch of the Project Proposal

Sustainable Smart Automated Farming

KAREL

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Teaser

- **ViFARM**, automated indoor farming with AI

- **Innovation:**
  - sensor-based *climate control*,
  - infrared *cameras* and sensors,
  - fine measurements of *temperature, humidity*
  - plant growth,
  - gravity-fed drip *irrigation*.

- **Photonics**, wavelength, intensity, angle control.

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Teaser

• Smart cities
• Agriculture
• Collaborations will result in innovative smart city products
Organisation Profile

- Karel’s core business is to design and manufacture telecommunication, IoT, 5G solutions and their peripherals
- 2400 employees, 170 R&D
- 10 million boards/year
  - Local market leader in telecommunication solutions
  - 15 million users in 30 countries
  - 3rd largest PBX / IP PBX manufacturer in Europe
  - 2nd largest PBX / IP PBX brand in MEA region
  - 1st brand in TDM port shipments in MEA region

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Proposal Introduction

• Vertical Indoor and Conventional Farms
• Analyze plant growth
  • LED intensity and spectrum
• Autonomous vehicles for farmers
  • conventional-tractors/indoor robotics
• Computer vision for farmer areas
  • Conventional-Drones/Indoor-cameras
• IoT framework and visualization platform
• Plant types - KPI definitions
• Planting scenarios
Proposal Introduction

- Framework for cloud-based management,
- sensor devices
- cameras
- government and private subsystems (grocery stores and big market chains)
- Automated Demand and Response (ADR)
Proposal Introduction

Looking for Partners

Collaboration points

- AI
- IoT Architecture
- Autonomous Vehicles/Rbots
- Monitoring
- Use case provider

Vertical Indoor Farm
Conventional Farm

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Proposal Introduction (2)

• **Outcome:**
  • Monitor **light, water and additives**
  • Monitor **growth** of the plant from seed stage till **maturation**
• Sample installations.
  • **tomato plant** in closed area
  • **vineyard**
• Algorithms
• Data visualization, monitoring the system
• The light usage analysis (the flux and angle of light)
• Project duration: **28 months with 7 work packages**
Partners

• Partners in the project will produce
  • sensor equipment,
  • computer vision
  • artificial intelligence
  • energy efficiency, energy harvesting
  • researches on effect of light
• Formerly contacted with partners from Turkey, Spain, Finland, Portugal and Romania
For more information and for interest to participate please contact:

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Presentation available via: