Pitch of the Project Proposal

Sustainable Smart Automated Farming

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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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- Smart cities
- Agriculture
- Collaborations will result in innovative smart city products

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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
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

Collaboration points

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

Vertical Indoor Farm
Conventional Farm

Looking for Partners

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Proposal Introduction

- **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

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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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