AKKA RESEARCH
INNOVATIVES SOLUTIONS

AKKA RESEARCH ACCELERATES YOUR INNOVATION

WHAT WE DO

- We develop key-competencies in anticipation of customer needs

OUR MISSION

- We boost existing businesses thanks to the "digital revolution"-like technologies

OUR MAGIC FORMULA

- We integrate advanced technologies into demonstrators in Agile mode

AKKA RESEARCH IN BRIEF

- Created in 2009
- 4 sites in France + 4 sites in Europe
- 20 main projects per year
- 40 permanent members
- 500 engineers per year
- 20 patents

AKKA RESEARCH ADDED-VALUE

DO QUICK - DO WELL

- Fast prototyping

"SELL" THE POTENTIAL OF A GIVEN TECHNOLOGY

- Thanks to our own prototypes and proofs of concept/competence (PoC)

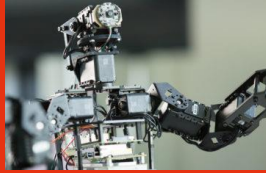**RUN TECHNOLOGICAL DEMONSTRATORS FOR OUR CUSTOMERS IN THEIR OWN ENVIRONMENT**

- Innovate in an agile method together with our customers (Innovation Consulting)

CLOSER TO YOUR NEEDS TO GO FURTHER IN INNOVATION

AKKA RESEARCH EMBRACES NEW TECHNOLOGIES IN 4 STRATEGIC TECHNO LINES

DRIVE THE INDUSTRY

OF THE FUTURE

DIGITAL INDUSTRY

- Artificial Intelligence
- Cloud computing & Big Data
- 5G connectivity & IOT
- Cybersecurity

AUTONOMOUS ELECTRIC SYSTEMS

- Collaborative smart robotics
- Electric mobility
- Charging / Supply microgrid

ADVANCED DESIGN & FABRICATION

- Digital & collaborative engineering tools
- Methods for system design, test, security
- Programmable material with additive manufacturing

AUGMENTED OPERATOR

- Human machine Interface
- Mechatronic & Co-botics
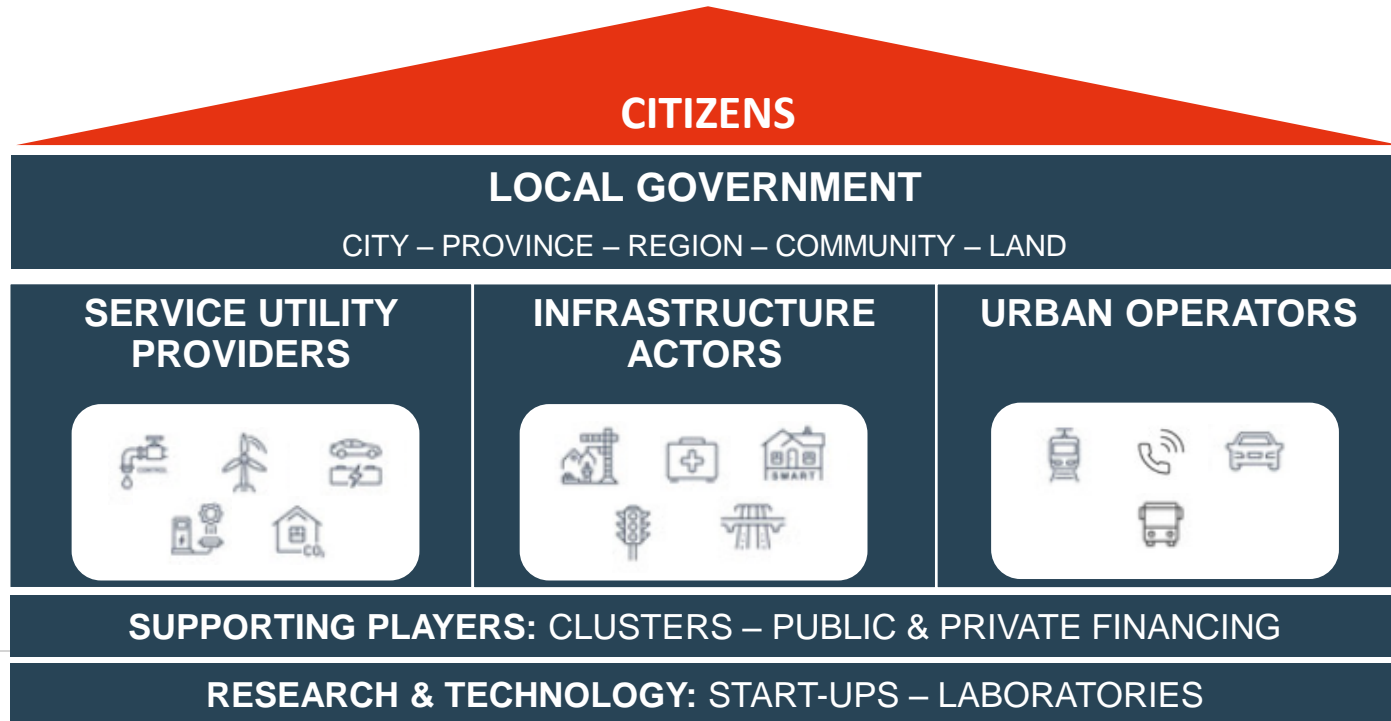- Immersive Technologies

AKKA & SMART CITIES

SMART CITY – DRIVERS FOR A BETTER FUTURE

A smart city is a territory that makes the most of innovation and technologies to enhance citizens' quality of life and boost economic and social attractiveness

IMPROVE FLOW MANAGEMENT WITH MULTIMODAL MOBILITY

COPE WITH CLIMATE CHANGE TO PROTECT RESSOURCES

UPGRADED URBAN INFRASTRUCTURES TO OPTIMIZE PERFORMANCE

IMPROVE CITIZEN'S QUALITY OF LIFE

NEW SERVICES TO ENHANCE TERRITORY ATTRACTIVENESS

CONNECTED, SAFE & EFFICIENT CITIES

DEEPEN DEMOCRACY : EMPOWER & ENGAGE CITIZENSHIP

STAKEHOLDERS – AN ECOSYSTEM OF PARTNERS

Global challenges shared by a network of public & private actors.

CITIZENS

LOCAL GOVERNMENT

CITY – PROVINCE – REGION – COMMUNITY – LAND

SERVICE UTILITY PROVIDERS

INFRASTRUCTURE ACTORS

URBAN OPERATORS

SUPPORTING PLAYERS: CLUSTERS – PUBLIC & PRIVATE FINANCING

RESEARCH & TECHNOLOGY: START-UPS – LABORATORIES

AKKA RESEARCH

AKKA POSITIONING – OUR OFFER

AKKA brings together usages and technologies to shape your Smart City solutions

SUSTAINABLE CITY

MOBILITY	INCLUSIVE & RESILIENT CITIES	INFRASTRUCTURES	ENVIRONMENT

SOLUTIONS

MOBILITY	INCLUSIVE & RESILIENT CITIES	INFRASTRUCTURES	ENVIRONMENT
• Autonomous & Connected Vehicle	• E-government	• Intelligent Building	• Renewable Energy
• Electric Vehicle	• Citizen Apps	• Smart Home	• Resources Saving
• Smart Multimodal Traffic	• Cyber Security	• Sustainable Construction	• Consumption Monitoring
• Last Mile	• Surveillance & Safety	• Intelligent Maintenance	• Pollution Monitoring
• Transport Sharing	• Crisis Management	• Parking	• Water Management
• Passenger Information	• E-learning & Training	• Signaling	• Waste Management
• E-Tourism	• Healthcare & Telemedicine	• Smart Lighting	• Smart Grid
• Sustainable Urban Logistic	• Real-time Urban Monitoring (Urban Dashboard)		

AKKA

AKKA POSITIONING – THE EXPERTISE

AKKA supports you for end-to-end solutions with a collaborative approach.

CONSULTING

DEVELOPMENT

IMPLEMENTATION

Assessment of your usages & needs to identify solutions and partners

Accurate products and processes with up-to-date technologies (Demonstrator, Platform, App, Sensors…)

Test and training for users acceptance and efficient put into practice of the solution

AKKA POSITIONING – ADDED VALUE

Thanks to its **unique expertise** and **ecosystem** combined with an usage-driven approach;

AKKA can contribute to develop & implement turnkey offers to build more livable cities.

AKKA associates its industrial knowledge and digital expertise to create **customized solutions meeting the real needs of its customers**.

AKKA reaches **pragmatic and user-centered solutions** through its transversal approach (mobility, energy, life sciences…)

AKKA partners leading industrial and disruptive start-ups to **foster an open innovation approach**.

TYPE OF PARTNERS SOUGHT

CITIES AND TERRITORIES

❖ Citizen centred needs, societal challenges to overcome

SERVICE UTILITY PROVIDERS

❖ Translation of societal challenges into technological challenges

TECH SMEs AND START-UPs

❖ Innovative solutions with potential use in Smart City context

H2020 TOPICS (DIRECT & INDIRECT LINK WITH SMART CITIES)

DIGITAL SECURITY (23/08/2018)

- ❖ SU-DS04-2018-2020: Cybersecurity in the Electrical Power and Energy System (EPES): an armour against cyber and privacy attacks and data breaches
- ❖ SU-DS05-2018-2019: Digital security, privacy, data protection and accountability in critical sectors

ICT (14/11/2018)

- ❖ ICT-11-2018-2019: HPC and Big Data enabled Large-scale Test-beds and Applications
- ❖ ICT-13-2018-2019: Supporting the emergence of data markets and the data economy
- ❖ ICT-19-2019: Advanced 5G validation trials across multiple vertical industries
- ❖ ICT-25-2018-2020: Interactive Technologies
- ❖ DT-ICT-10-2018-19: Interoperable and smart homes and grids

H2020 TOPICS (DIRECT & INDIRECT LINK WITH SMART CITIES)

ICT (28/03 & 02/04/2019)

❖ ICT-01-2019: Computing technologies and engineering methods for cyber-physical systems of systems

❖ ICT-08-2019: Security and resilience for collaborative manufacturing environments

❖ ICT-09-2019-2020: Robotics in Application Areas

❖ ICT-15-2019-2020: Cloud Computing

❖ DT-ICT-01-2019: Smart Anything Everywhere

❖ DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories

❖ DT-ICT-11-2019: Big data solutions for energy

H2020 TOPICS (DIRECT & INDIRECT LINK WITH SMART CITIES)

MOBILITY FOR GROWTH (16/01/2019 – STEP 1)

- ❖ LC-MG-1-9-2019: Upgrading transport infrastructure in order to monitor noise and emissions
- ❖ LC-MG-1-10-2019: Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations
- ❖ MG-2-7-2019: Safety in an evolving road mobility environment
- ❖ MG-2-8-2019: Innovative applications of drones for ensuring safety in transport
- ❖ MG-2-9-2019: Inco Flagship: Integrated multimodal, low-emission freight transport systems and logistics
- ❖ MG-4-5-2019: An inclusive digitally interconnected transport system meeting citizens' needs

H2020 TOPICS (DIRECT & INDIRECT LINK WITH SMART CITIES)

SECURE, CLEAN AND EFFICIENT ENERGY (05/02/2019)

- ❖ LC-SC3-ES-1-2019-2020: Flexibility and retail market options for the distribution grid
- ❖ LC-SC3-ES-2-2019: Solutions for increased regional cross-border cooperation in the transmission grid
- ❖ LC-SC3-SCC-1-2018-2019-2020: Smart Cities

AUTOMATED ROAD TRANSPORT (24/04/2019)

- ❖ DT-ART-03-2019: Human centred design for the new driver role in highly automated vehicles
- ❖ DT-ART-04-2019: Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all

GREEN VEHICLES (24/04/2019)

- ❖ LC-GV-03-2019: User centric charging infrastructure
- ❖ LC-GV-05-2019: InCo flagship on "Urban mobility and sustainable electrification in large urban areas in developing and emerging economies"

REFERENCES PROJECTS

AIRCOBOT (FUI FRENCH NATIONAL PROGRAM) 2013-2016

THE PROJECT

An autonomous robot for aircraft visual inspection

OBJECTIVES

Design and setup a collaborative mobile robot demonstrating aircraft inspection for daily checks, turnaround and maintenance checks

KEY TECHNOLOGIES AND SKILLS DEVELOPED

❖ Innovative localization and navigation modes (matching clouds and person followers, etc.)

❖ Sensor integration and data analysis

❖ Overall prototype integration and demonstration

Watch the video

PARTNERSHIP

AKKA TECHNOLOGIES · 2MoRO Solutions · M3 SYSTEMS · Institut Clément Ader · ARMINES · sterela ADVANCED SOLUTION MAKER · LAAS-CNRS · aerospace vallée valley · Air-COBOT

LINK&GO - AUTONOMOUS CAR DRIVING (INTERNAL)

THE PROJECT

A dual-mode, connected, urban, electric car

OBJECTIVES

Demonstrate AKKA's know-how on innovative automotive concepts

KEY TECHNOLOGIES AND SKILLS DEVELOPED

- ❖ Manual or autonomous driving
- ❖ Fully electric, Drive by wire
- ❖ Connected car
- ❖ Motor Suspension Direction (MSD)
- ❖ Connected services platform
- ❖ User interaction insertion
- ❖ Automatic recharge robot
- ❖ Physical concept car

Watch the video

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AUTOPILOT (H2020) 2017-2019

THE PROJECT

Automated driving Progressed by Internet Of Things" (AUTOPILOT) brings IoT into the automotive world to transform connected vehicles — moving "things" in the IoT ecosystem — into highly and fully automated vehicles.

OBJECTIVES

❖ Enhance the driving environment perception with IoT sensors enabling safer highly automated driving
❖ Use and evaluate advanced vehicle-to-everything (v2x) connectivity technologies

KEY TECHNOLOGIES AND SKILLS DEVELOPED

❖ Management of Test Data in a Field Operational Test context (FESTA)
❖ Development of a Safe Platooning System in Urban Environment

PARTNERSHIP

❖ ERTICO, CEA, Continental, CR FIAT, DLR, FIA, Gemalto, Huawei, IBM, NXP, PSA, STMicro, Thales, TNO, TomTom, Valeo, VTT, Vicomtech, etc.

❖ Cities involved: Tampere, Versailles, Livorno-Florence Daejeon, Eindhoven, Vigo)
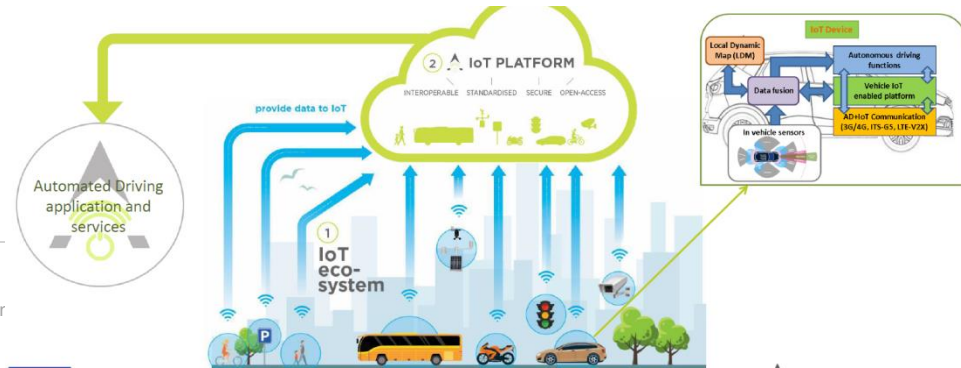
EUSYSFLEX (H2020) 2017-2021

THE PROJECT

By 2050, electricity use is estimated to increase from 20% of the overall European energy use today to 40% of energy needs. At the same time, by 2030 over 50% of the overall energy in the pan-European electricity system is targeted to be provided by RES. This represents a radical challenge to the nature of the European power electricity system.

OBJECTIVES

Ensuring an efficient and sufficient level of system services are provided to facilitate meeting world leading levels of RES-E while maintaining the level of resilience that consumers and society have come to expect from the European electricity system.

KEY TECHNOLOGIES AND SKILLS DEVELOPED

❖ Definition and deployment of a batch processing environment that enables Big Data analytics

❖ Definition and implementation of Stream Processing environment that enables data stream acquisition and computation in real-time of information required by the TSO, DSO and Customers.

PARTNERSHIP

EirGrid, Imperial College London, EDF, Fraunhofer, VTT, Enercon, Innogy, Upside Energi, Soni, Siemens, Enel, KU Leuven, etc.

ELVITEN (H2020) 2017-2020

THE PROJECT

ELVITEN demonstrates the usefulness of light electrified vehicles for urban transportation. Focus is on bicycles, scooters, tricycles and quadricycles (EL-VS).

OBJECTIVES

ELVITEN will holistically tackle all issues impeding the wide market deployment of EL-Vs (Electric Light Vehicle), by proposing replicable usage schemes to boost ownership or sharing of all categories of EL-Vs by systematic and occasional urban travellers and by light delivery companies.

KEY TECHNOLOGIES AND SKILLS DEVELOPED

❖ Industrial software development, quality, usability, scalability and reliability of software architectures

❖ Development and implementation of the dedicated Data Infrastructure for EL-Vs sharing and access to charging points.

PARTNERSHIP

❖ ICCS, Atos, ERTICO,FIA, University of Leeds, etc.

❖ Cities involved: Bari, Genova, Roma, Berlin, Trikala, Malaga

CLARUS (H2020) 2015-2017

THE PROJECT

Outsourcing data to the cloud has many advantages: cost-saving benefits of cloud services for storage and processing of large data volumes (e.g. clinical images and patient files, geospatial datasets). Data privacy and confidentiality must be protected.

OBJECTIVES

❖ Scientific advances in Search and Processing data while applying cryptography / obfuscation / split & merge techniques.

❖ Shall allow end users to monitor, audit and retain control of the stored data without impairing the functionality and cost-saving benefits of cloud services.

KEY TECHNOLOGIES AND SKILLS DEVELOPED

❖ Development of innovation data protection solutions (multi-cloud data splitting, searchable homomorphic encryption, spatial cloaking anonymization, etc.)

PARTNERSHIP

VALET (FRENCH NATIONAL RESEARCH AGENCY) – 2016-2018

THE PROJECT

For car-sharing systems, relocation strategies require more sophisticated techniques for their implementation on cities. As automatic relocation cannot be achieved for legal reasons, an alternative is to get a leader vehicle, driven by a human, which comes to pick up and drop off vehicles over the stations.

OBJECTIVES

VALET project aims to find a solution through the development of an intelligent and efficient redistribution system that applies all cars including electric vehicles.

KEY TECHNOLOGIES AND SKILLS DEVELOPED

* ❖ Definition of global architecture and interaction between component of the solution
* ❖ Definition/conception and realization of operator MMI
* ❖ Realization of parking management system (including algorithm and MMI).

PARTNERSHIP

Ínría
INVENTEURS DU MONDE NUMÉRIQUE

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PASSION FOR
TECHNOLOGIES