“The best way to predict the future is to invent it.”

Alan Kay

LINK & GO
Passion for technologies

Tomorrow’s innovation arises from the link between engineering competence, technologies and new trends.

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The best way to predict the future is to invent it."

The AKKA Group - on the way to becoming the European leader in mobility services - has joined forces with MBtech and Aeroconseil to round out its range of services in the mobility sectors.

One immediate result of this cross-fertilization is the Link & Go. This project was based on our passion for technologies. This passion unites us. We work together to create innovations and solutions for the future, with our clients and employees as the two main focuses. We want to understand our clients and their expectations. At the same time, we also want to develop our employees’ expertise.

What better way to showcase our common passion for technology than by designing an urban mobility vehicle?

With the support of Yvelines, our project links sectors, technologies, intelligence, people and cultures. Link & Go is a unique experimental concept car. It is not a revolution, it is another step along the evolutionary path towards the perfect vehicle for future cities. It combines all-electronic autonomous driving with embedded social-media channels - the common challenges for urban and connected mobility. The mobility industries can benefit from our skills, whether in designing an e-drive system, developing the operating concept or any other feature of this unique vehicle.

We are pleased to present our broad portfolio of services based on the Link & Go project. Read on and discover our link.

Hartmut Tresp
Non-Executive Chairman
MBtech Group

Phillippe Obry
CIO
AKKA Group
LIDAR (light detection and ranging) sensors to detect the environment
SLAM (simultaneous localization and mapping) and GPS for localization
Sensors to detect obstacles
Path planning and trajectory control
Automatic charging station

Rotating front seat in lounge mode
Retractable steering wheel for extra space
Lateral door for easy access
Central touch screen to control driving modes, destinations, social media and more
Lounge screen for augmented reality and entertainment

Dedicated multimodal user interfaces
Gestures recognition system
Touch gestures recognition
Augmented reality
Smart connectivity hub for wireless information transmission
Car-sharing and car-pooling through embedded social media channels
Lounge screen for augmented reality and entertainment

Drive-by-wire
E-drive system with two motor arms (28 kW each)
Suspension direction system (SD) in one single component
48 V ECU power network
Battery pack (400 V) for 200 km range

LINK & GO CONCEPT FEATURES

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/ Lounge screen for augmented reality and entertainment
Imagine a car in which everyone is a passenger. A car in which the interior serves as a comfortable lounge. Above all, imagine a car that is intelligent, beautifully environmental, going way beyond the restrictions of previous electric cars.

In the AKKA Research Center, we have created such a car. We have designed the urban mobility of tomorrow. The Link & Go offers a modular interior that can transform into a lounge in automatic driving mode. We have created maximum comfort in an elegant vehicle that is only 3.6 meters long:

- Rotating front seat in lounge mode
- Retractable steering wheel for extra space
- Lateral door for easy access
- Central touch screen to control driving modes, destinations, social media and more
- Lounge screen for augmented reality and entertainment

“A SELECTION OF OUR LINKED SERVICES”

In our design centers, we transfer our technologies across a broad range of sectors. We take a human-oriented, collaborate approach to fields including transport, aeronautics, space and energy. Transport clients can view all our design services, from the first sketch to series production readiness:

- Styling & design – from art to part
- Mechanical engineering
- Digital mock-up (DMU)
- Validation & simulation
- Cockpit functionality and ergonomics

“It’s a functional design: a solution for the social mobility.”

Jérôme Julien, Mechanical Project & Design Manager
We are familiar with driver assistance for parking and distance control. But why not extend the concept to include fully autonomous driving? We conducted experiments with our partner INRIA (National Institute for Research in Computer Science and Control) that went far beyond driver assistance systems. We combined technologies to develop the capabilities which enable the vehicle to plan, control and learn trajectories (from the manual mode):

- LIDAR (light detection and ranging) sensors to detect the environment
- SLAM (simultaneous localization acquisition and mapping) and GPS for localization
- Sensors to detect obstacles
- Path planning and trajectory control
- Automatic charging station

An automatic charging station has been developed thanks to our partnership with ControlSys and DBT: An automated arm robot plugs and unplugs the vehicle socket and is shared between several parking places.

A SELECTION OF OUR LINKED SERVICES

Autonomous driving still needs time to reach series readiness. However, we are already capable of testing vehicles autonomously. We would be pleased to contribute our unique skills in autonomous driving to your next production vehicle:

- Image and signal processing
- Autonomous Testing Ground (ATG)
- Development of driving or flight management functions
- Simulator development (e.g. pre-safe, driver assistance)

“Today the person is the driver, soon he’ll be a passenger.”

- Luc Barthélémy, Project Manager
Looking forward, we are working toward developing directional suspension combined with a motor arm in a unique design
- Benjamin Cans, Engine Expert

E-drive combined with autonomous driving and drive-by-wire is a radical concept in itself. But we wanted to go further and improve trajectory, turning, even develop a turn-around function. This gave rise to the motor arm and to the directional suspension (SD) system utilized on the Link & Go. Many companies have carried out motor-wheel tests. However, mass has always been a problem.

Motor arm:
Our latest motor arm concept is both significantly lighter and more compact. Plus, we constantly improve the innovation through on-going development.

Directional suspension system:
Combined with the 48 V power supply, we have linked innovation with dependability. Our directional suspension system allows unbelievable mobility in every direction along with on-the-spot turning.

At the AKKA Group, we would be pleased to work with vehicle production clients by providing:

- E-drive systems competencies
- Electrical vehicle engineering & architecture
- Testing & validation lab including an e-drive systems test bench
- Battery methods & testing
- Electromagnetic compatibility (EMC) testing laboratory
- Proving grounds
- Powertrain development
- Drive-by-wire

**Power**
Electrical supply: 48 V

**Directional Suspension**

- Power: 200 W each
- Electrical supply: 48 V

**Motor Arms**

- Power: 28 kW each

**Battery Pack**

- Electrical supply: 400 V
- Range: 200 km
LINK & GO

Link & Go is a social car. One that removes the need for a driver, yet brings driver and vehicle closer than ever. That is because the driver can control the car in many ways – from both nearby and far away. But it does not stop there. Link & Go processes so much more:

- Dedicated multimodal user interfaces
- Gestures recognition system
- Touch gestures recognition
- Augmented reality
- Smart connectivity hub for wireless information transmission

A SELECTION OF OUR LINKED SERVICES

The AKKA Group offers many tools and applications to bring about these technologies:

- System development & implementation
- Smart connectivity solutions
- Embedded software development
- Passenger information system
- User interface for complex systems
- User interface & applications (HMI)
- PROVEtech (in-house testing and diagnostic tool suite)
- Concept development (e.g. Identiface)
- HIL testing

“Bringing the car closer to the driver was one of the major objectives in this project.” - Benoit Rigolleau, HMI Expert
In the course of on-going research as a response to the problem of car congestion and pollution in cities, e-drive and car-sharing are becoming more common and evolve in parallel with smartphone apps. For the future and for the Link & Go, electric cars and car-sharing can be used in the same sentence:

- Car-sharing and car-pooling through embedded social media channels
- Easy access
- E-drive: zero emission
- Autonomous emission efficiency through traffic flow ‘fluidification’
- Manual driving efficiency through speed recommendation

Transport is increasingly linked with social and green issues. At the AKKA Group, we have a passion for smart apps linking mobility to phones. We offer you the following in order to create the vehicle and the city of tomorrow:

- Operation strategy
- Mobile application development
- Electrical vehicle engineering & architecture
- Lean & green consulting studies

“Urban car-sharing is the future.”
- Hartmut Tresp, Non-Executive Chairman MBtech Group
PUBLISHER
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INNOVATION MANAGEMENT
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PRINTING
Gmähle-Scheel Print-Medien GmbH

PUBLICATION DATE
February 2013

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WITH THE KIND SUPPORT OF

SPECIAL THANKS TO
IBEO
New Imaging Technologies
Aeon
Sentek solutions