



CROSS-SECTOR COLLABORATION BETWEEN MOBILE AND AUTOMOTIVE SECTORS TO BUILD CONNECTED CARS OF THE FUTURE

Dr Mike Bell
Global Connected Car Director, Jaguar Land Rover

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AGENDA



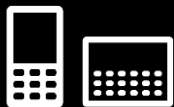
- 1 Connectivity is at the heart of our vehicles
- 2 It's not just about performance
- 3 Local markets change...
- 4 Connected car vision
- 5 Business model innovation
- 6 Closing remarks



CONNECTIVITY IS AT THE HEART OF OUR VEHICLES



INCONTROL TOUCH PRO



Complete
end-to-end experience



Personal & smart
guidance



Useful Everyday
Daily Drive Relevance



Online and Offline
for key use cases

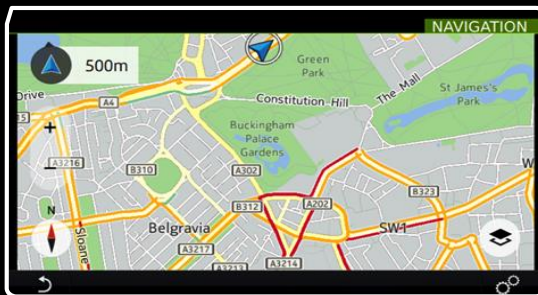


INCONTROL TOUCH PRO SERVICES

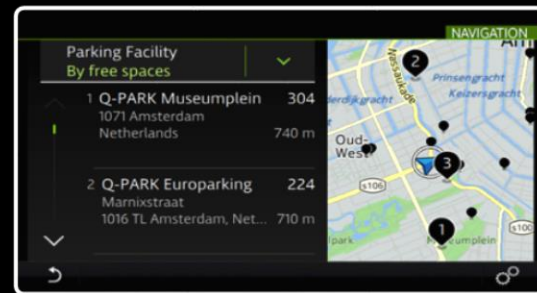


Connected services & features:

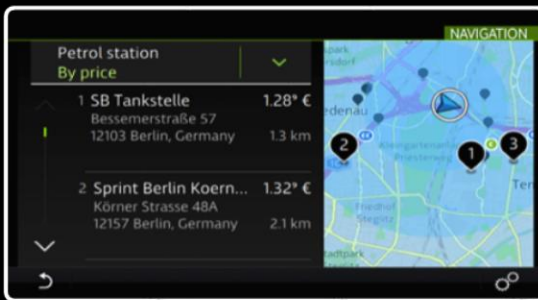
- Real Time Traffic Flow
- Fuel Price Service
- Parking Service
- Online Search
- Satellite View
- Street View
- Online Routing
- Cloud Sync
- Door to Door routing
- Sharing of ETA and places
- Live Apps



Real Time Traffic



Parking Service



Fuel Prices



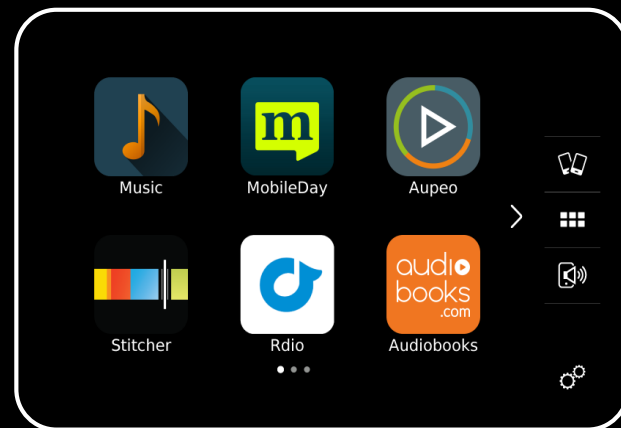
Flight Tracker

INCONTROL APPS

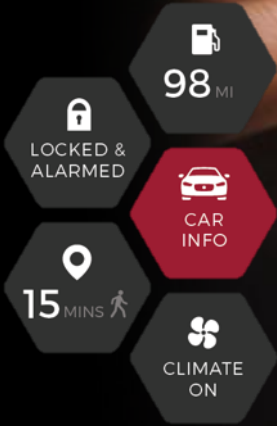


InControl Apps uses market-leading technology to deliver a selection of well-known Apps directly to your in-car touch screen.

InControl Apps supports the latest mobile technologies:
Android v4.0 upwards and iPhone 5 onwards.



INCONTROL PROTECT



IT'S NOT JUST ABOUT PERFORMANCE



AUTO MAKERS REQUIRE SIMPLICITY

But connectivity is becoming more complex



- Jaguar Land Rover sells vehicles in 160 markets and has manufacturing plants in UK, China, India, Brazil & Slovakia (2018)
- Mobile technologies use different frequencies in different regions increasing hardware variants
- Meeting country-specific legislation only increases this complexity : co-ordination between auto makers and mobile network operators can work together



LOCAL MARKETS CHANGE ...



AUTO MAKERS REQUIRE SIMPLICITY

GSMA Embedded SIM Specification



- Standardised mobile network operator-independent provisioning
- Standardised SIM specification – no longer proprietary mechanisms
- Allows Jaguar Land Rover to install SIM profiles within manufacturing facilities and on arrival within a country – minimises assembly complexity
- Allows Jaguar Land Rover to provide its customers with the best experience by selecting mobile operators with the fastest data rates, best coverage and seamless operation when driving between countries
- In the future, seamless communication between our vehicles and connected homes, offices and IoT devices will enable an enhanced customer experience
- Helps drive forward collaboration with multiple industry partners

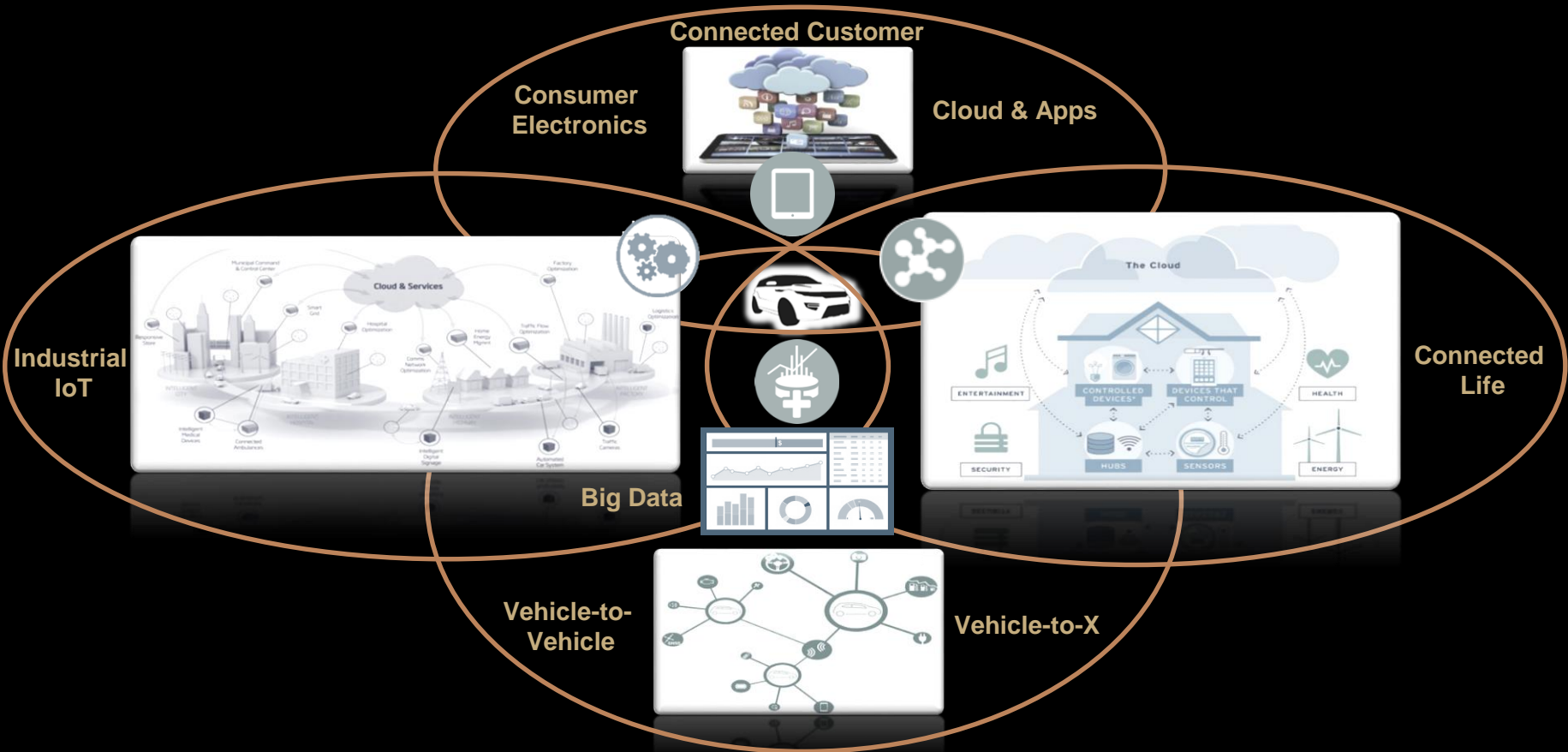


CONNECTED CAR VISION



JAGUAR LAND ROVER'S CONNECTED CAR VISION

The vehicle as the ultimate connected device



BUSINESS MODEL INNOVATION



BUSINESS MODEL INNOVATION

MNO / OEM co-innovation



- Most mobile operator business models driven by traditional transactional OSS/BSS infrastructure
- Customers will not necessarily look to spend large sums of additional money on connected services
- Additional revenue may be found from B2B and B2B2C
- More collaboration required to think outside of the box



ARE WE CONNECTED ENOUGH?



CLOSING REMARKS



The world is increasingly more connected, people's lives are ever more digital and cars are evolving to meet these connected expectations.

Jaguar Land Rover has already put connectivity at the heart of its vehicles and continues to invest to exploit these technologies.

Whilst the opportunities that faster connectivity brings allows us to develop richer features and services, we need to balance this against increasing complexity (frequencies, regulation) and variable network coverage on our roads.

Automotive industry will be an increasing consumer of mobile data but to fully unlock the benefits for both customers and our industries, we need to develop more sophisticated business models.

The evolution of mobile technologies, from the emergence of Low-Power, Wide-Area (LPWA) networks to the work to define & standardise 5G, will have a transformational effect on the automotive industry, by collaborating, our industries and customers will collectively benefit.



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