PEUGEOT ENHANCED
MOBILITY EXPERIENCES

WORLD MATERIALS FORUM

MAXIME PICAT JUNE 2016

PEUGEOT

URBANIZATION

CO_2 POLICIES

ECONOMIC CONSTRAINT

CHANGING VALUES GENERATION Y

TECHNICAL ENABLERS

B2C

- Growing customer demand & emerging market segments focused on **using/sharing vehicles**
- **Decision** on transport mean in **real-time**
- **Smart phone** becoming a key **sales channel** for mobility

B2B

- Identification of **'Mobility'** as a key topic for **future cost optimization**
- Consideration of Total Cost of Mobility (**TCM**) instead of pure fleet cost (TCO)
- **Centralization** of responsibilities for **fleet & travel**

IMPACTS ON AUTOMOTIVE :
TOWARD ZERO EMISSION & INTENSIVE USAGE

AUTOMOTIVE CHALLENGES :
TOWARD ZERO EMISSION VEHICLES

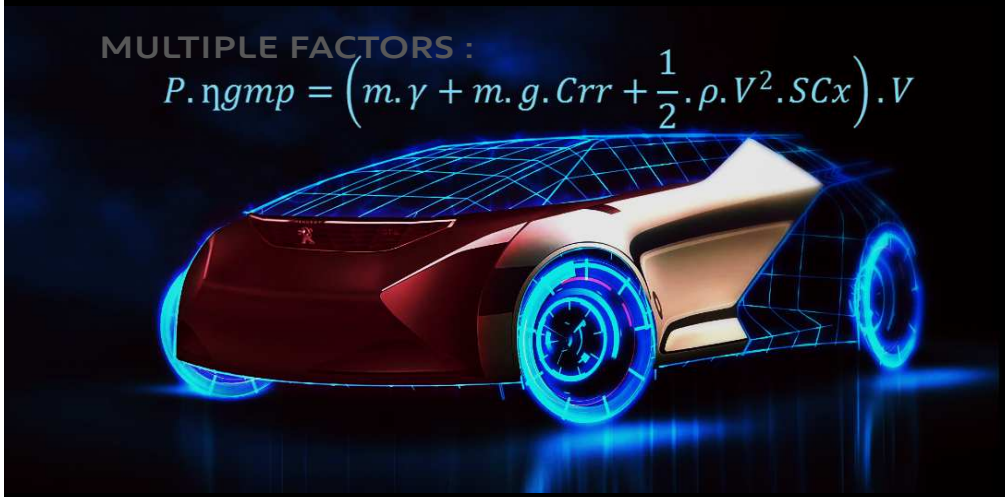
TOWARDS ZERO EMISSION :

New powertrains : Hybridization, Electrical vehicle, Fuel cells, biogas…

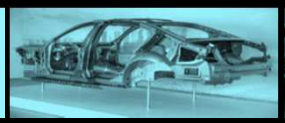
Optimization of the vehicle consumption : weight reduction, aerodynamics & rolling resistance

MULTIPLE FACTORS :

$$P.\eta gmp = \left(m.\gamma + m.g.Crr + \frac{1}{2}.\rho.V^2.SCx\right).V$$



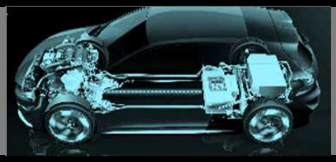
Factors		Impact (g C02/km)	Impact (L/100 km)
η_{gmp} Powertrain efficiency	+ 10% η	12,0 g	10%
m Weight	-100 kg	3,5 g à 6 g	Up to 0,35 L/100 km
C_{rr} Rolling resistance	-1 kg/t	2,0 g	0,10 L/100 km
Electrical consumption	-100 W	1,5 g	0,08 L/100 km
SC_x Aerodynamics	-10 dm²	5,0 g	0,25 L/100 km



TOWARD ZERO EMISSION VEHICLES :
CHALLENGES ON MATERIALS

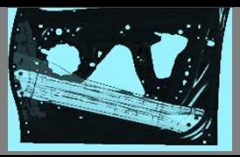
NEW POWERTRAINS

Electrification Impacts on powertrains
Material: magnetic (rare earth) & battery materials (lithium, cobalt,..)
Process: magnetizing and coil impregnation of the stators



WEIGHT REDUCTION BY COMPOSITE

Part: side impact beam
Material: organo-sheet PA66 CGF
Process: thermostamping
weight saving > 50%, target 0,6kg per door



Part: wishbone
Material: organo-sheet PA66 CCF
Process: thermostamping
weight saving 50%, target 1kg per drive train

AERODYNAMIC

Part: local modification of car geometry (e.g. bumper) with optimization about the aerodynamic air flow
Material: shape-memory alloy
Technology: active pilot of structure according to the driving situation CO2 saving: ~3 g/km à 120 km/h

AUTOMOTIVE CHALLENGES :
NEW USAGES





HUGE IMPACTS
MAINTENANCE / REPAIR / CLEANING / ATTRACTIVENESS / HYGIENE ...

TOWARD INTENSIVE USAGE:
CHALLENGES ON MATERIALS

KEY CHALLENGES *:*

self-repairing - shape memory - durability - scratch resistance – antibacterial - absorption of odors – no finger marks…

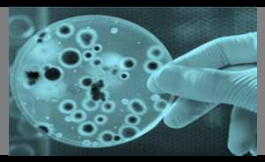
SELF REPAIRING PAINTING

Exterior : to repair the micro scratch and daily dirtiness
Interior : to repair the shocks and micro scratch decoration parts



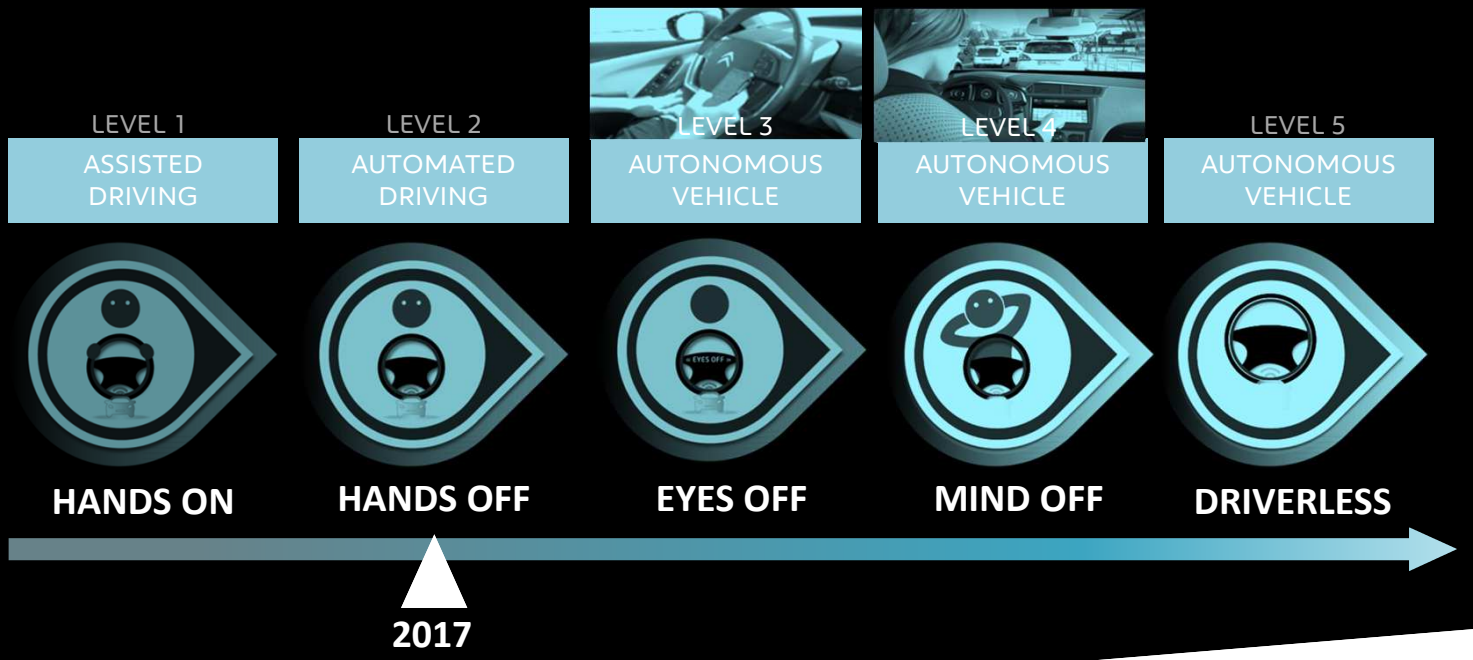

ANTI BACTERIAL MATERIALS

Interior : on very prehensible parts (e.g. gear knob, steering wheel,…)
Anti odors fabrics Interior : contribution of comfort and feeling good in the cockpit
Foam with memory of form Interior : contribution of comfort on the seats


AN EXTENDED EXPERIENCE : :

AUTONOMOUS DRIVING ROAD MAP



WORLD MATERIALS FORUM | PEUGEOT ENHANCED MAXIME PICAT **MOBILITY EXPERIENCE** JUNE 2016

WORLD MATERIALS FORUM

PEUGEOT

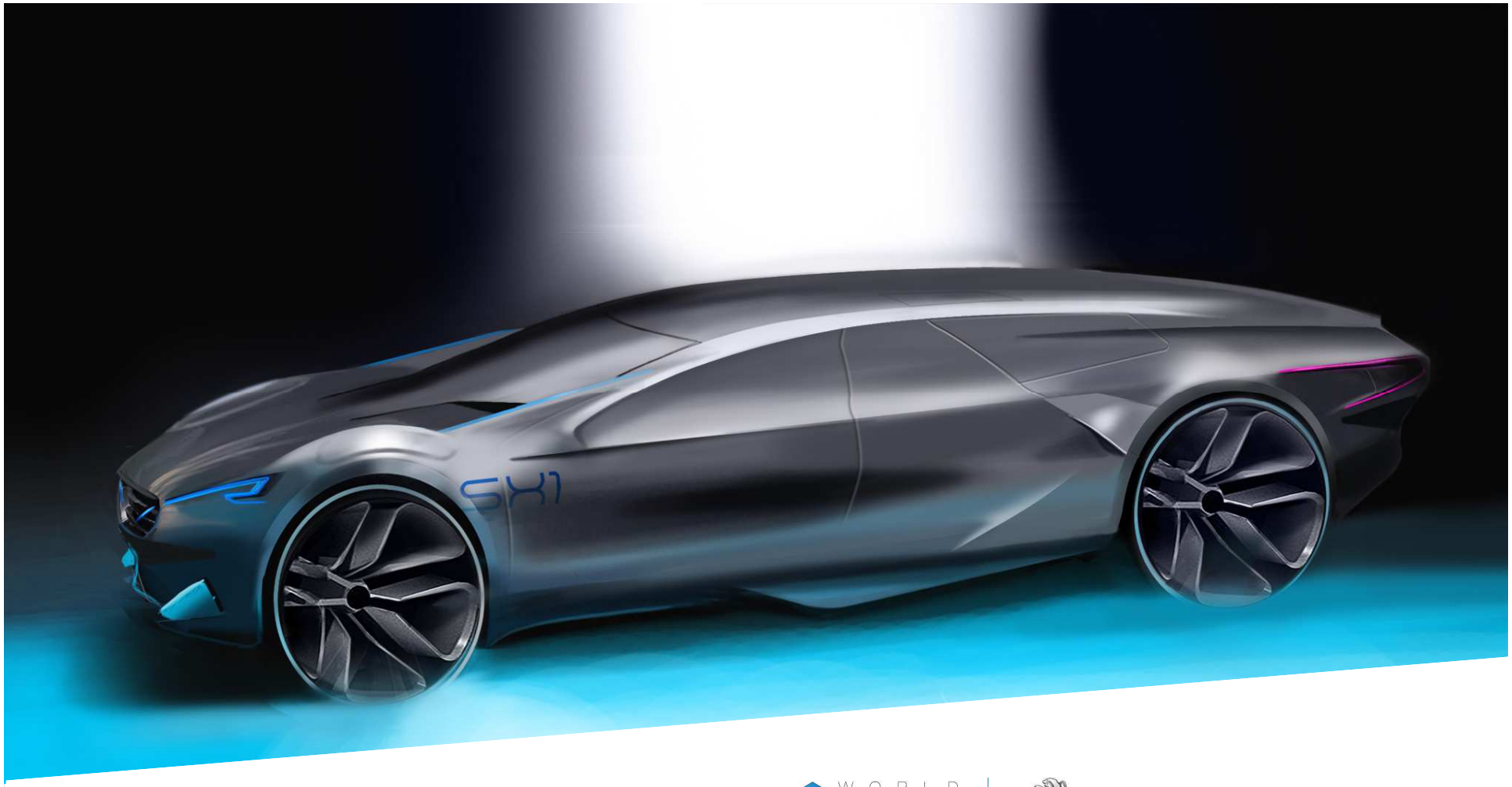
ENHANCED **MOBILITY EXPERIENCE**

MAXIME PICAT JUNE 2016

WORLD MATERIALS FORUM | PEUGEOT

ENHANCED **MOBILITY EXPERIENCE**

MAXIME PICAT JUNE 2016



WORLD MATERIALS FORUM

PEUGEOT

ENHANCED **MOBILITY EXPERIENCE**

MAXIME PICAT JUNE 2016

WORLD MATERIALS FORUM

MAXIME PICAT JUNE 2016

PEUGEOT