



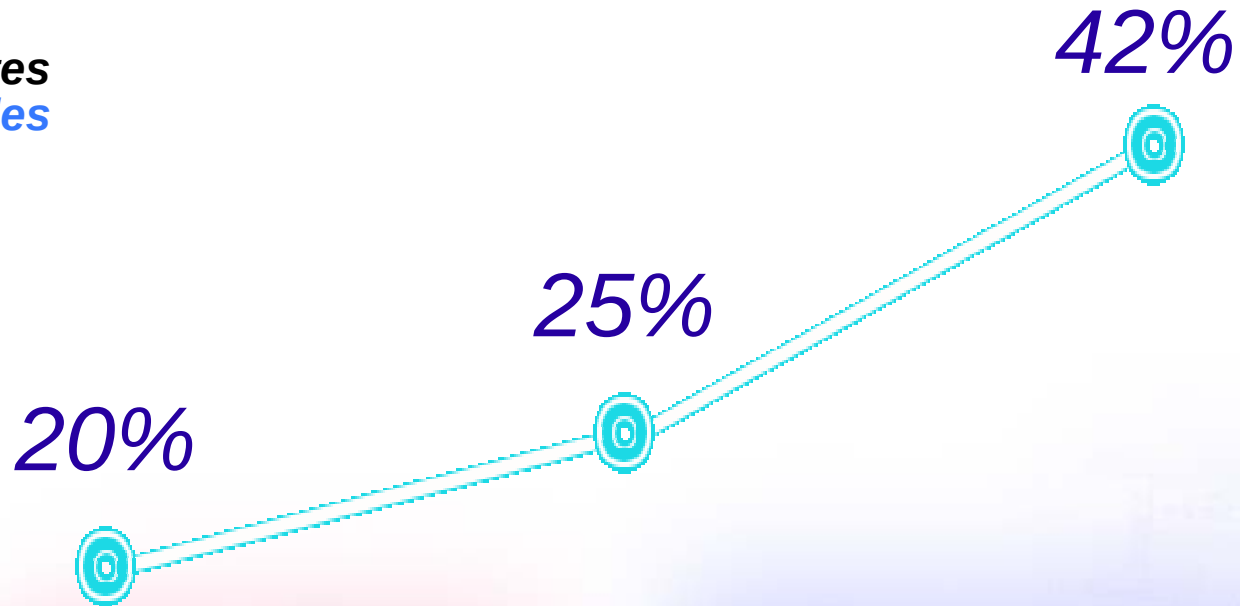
More than half a million ultra clean
PSA Diesel vehicles with FAPTM in the field.

Gérard BELOT PSA Peugeot Citroën

Evolution du Diesel en Europe

Growth in Diesel sales in Europe

% des ventes
% of sales



1993

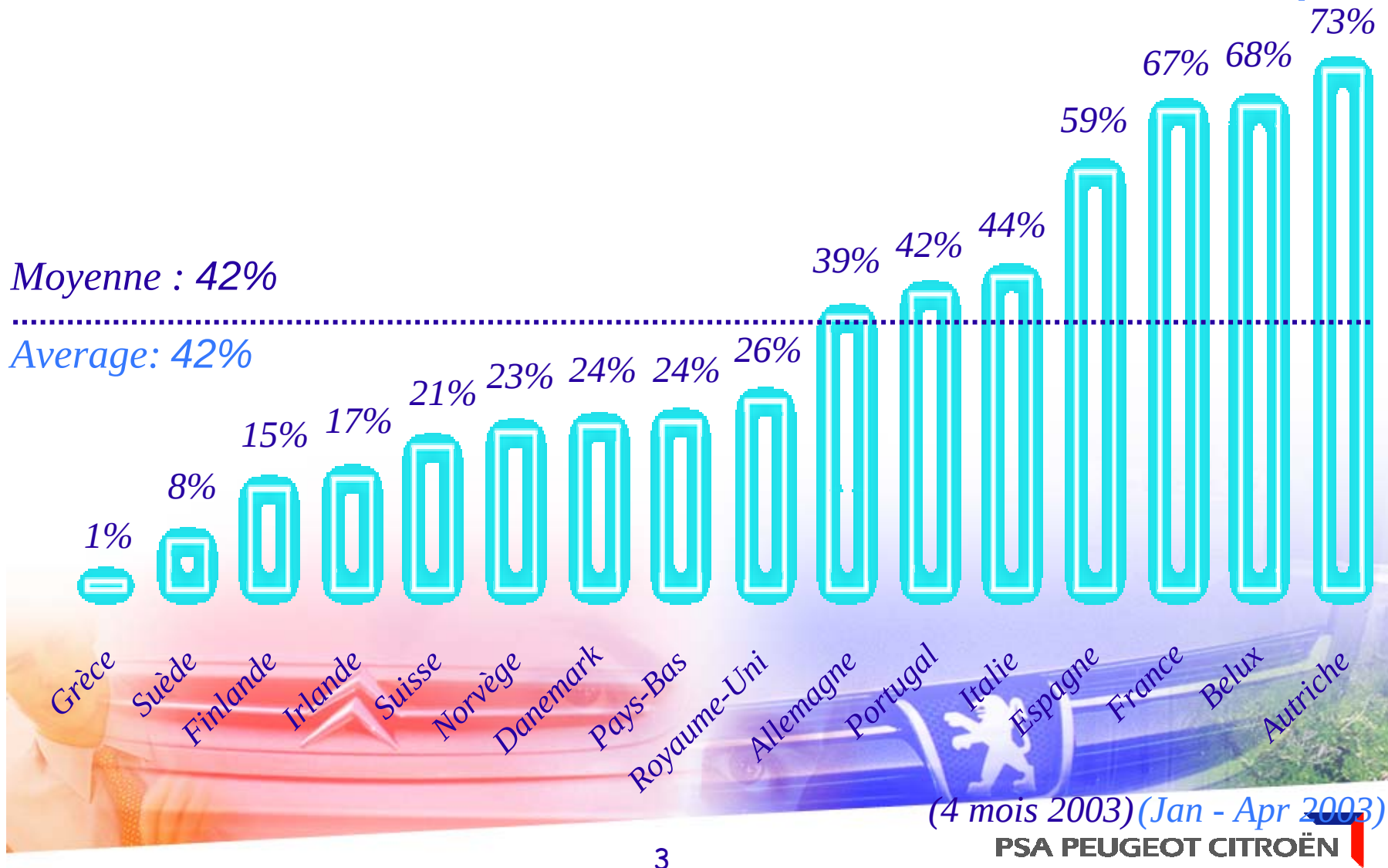
1998

2003

(4 mois/janv-avril)
(4 months/Jan - Apr)

Le Diesel en Europe

Diesel sales in Europe



Pourquoi le Diesel ? Why Diesel?

Maîtrise de l'effet de serre
Greenhouse friendly

Economie de consommation
Lower fuel consumption

Potentiel de progrès technologique
Potential for technological progress

La réponse de PSA Peugeot Citroën PSA Peugeot Citroën's response

*En 1998, lancement du Common Rail HDi
HDi Common Rail engine launched in 1998*

Moins 20% de consommation
Fuel consumption cut by 20%

Division par 2 des émissions polluantes
Polluting emissions cut in half

Agrément de conduite
Driveability



La réponse de PSA Peugeot Citroën PSA Peugeot Citroën's response

Éliminer les particules

Eliminate the particulates



Historique Background



***Présentation du Filtre A Particules
en avril 1999 à Paris***
***Particulate filter first presented
in Paris in April 1999***

***1^{ère} Mondiale sur
la Peugeot 607 en mai 2000***
***Available as a “world first” on
the Peugeot 607 in May 2000***



Déploiement au sein des gammes Deployed throughout the ranges

607



C5



C8



406



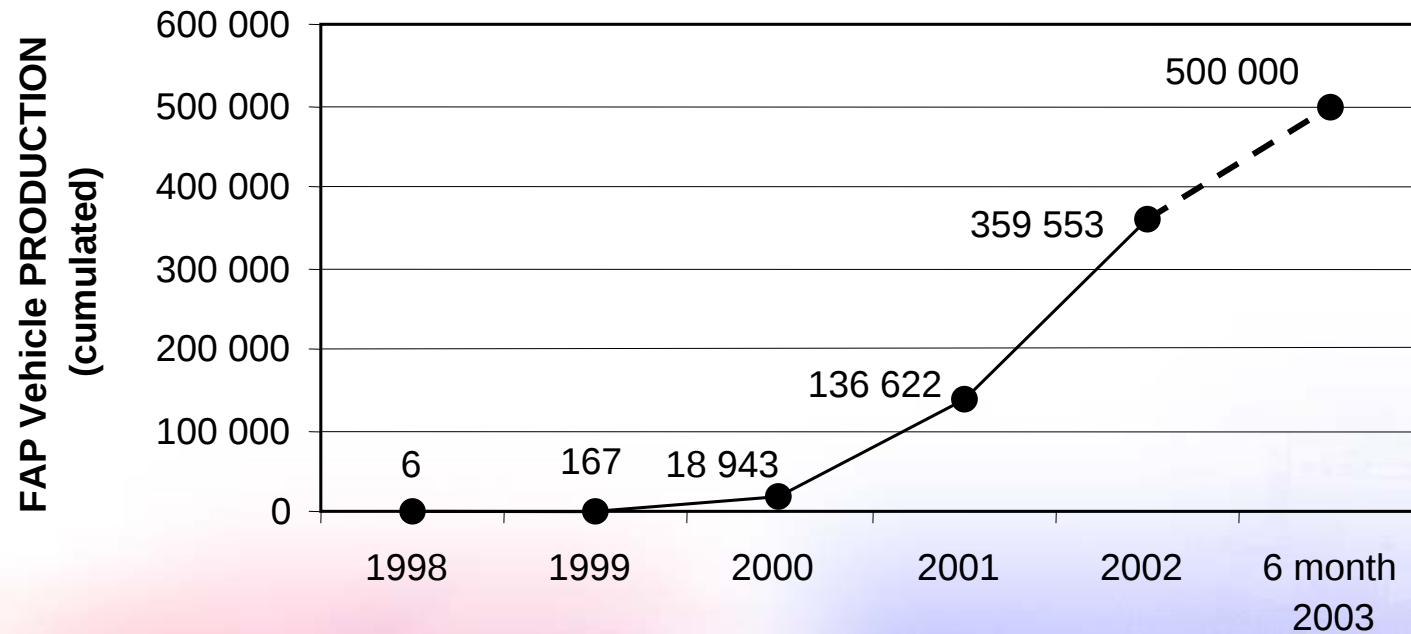
307



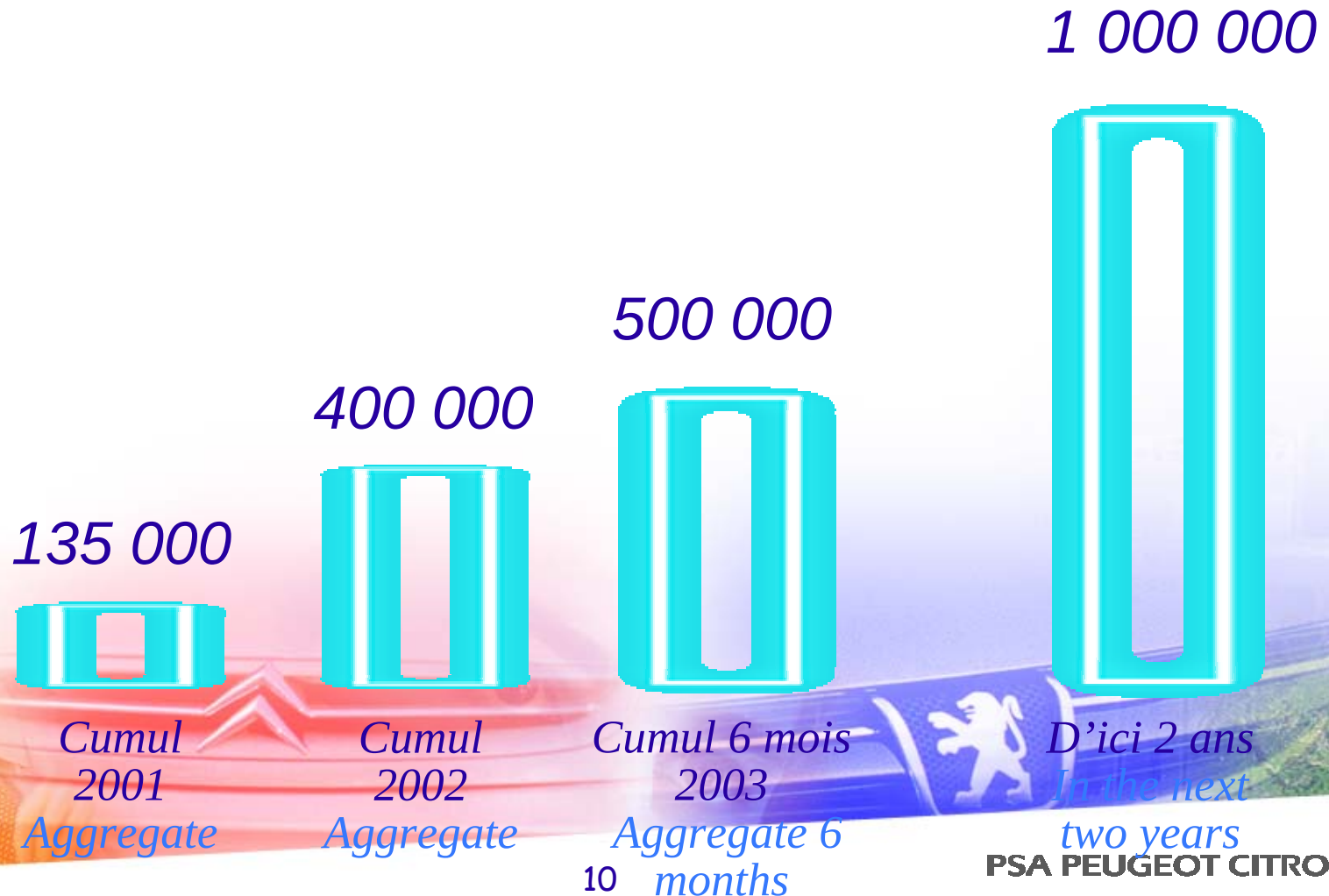
807



FAP™ SYSTEM PRODUCTION



Véhicules équipés de FAP DPF-equipped vehicles



Comment ?
How?

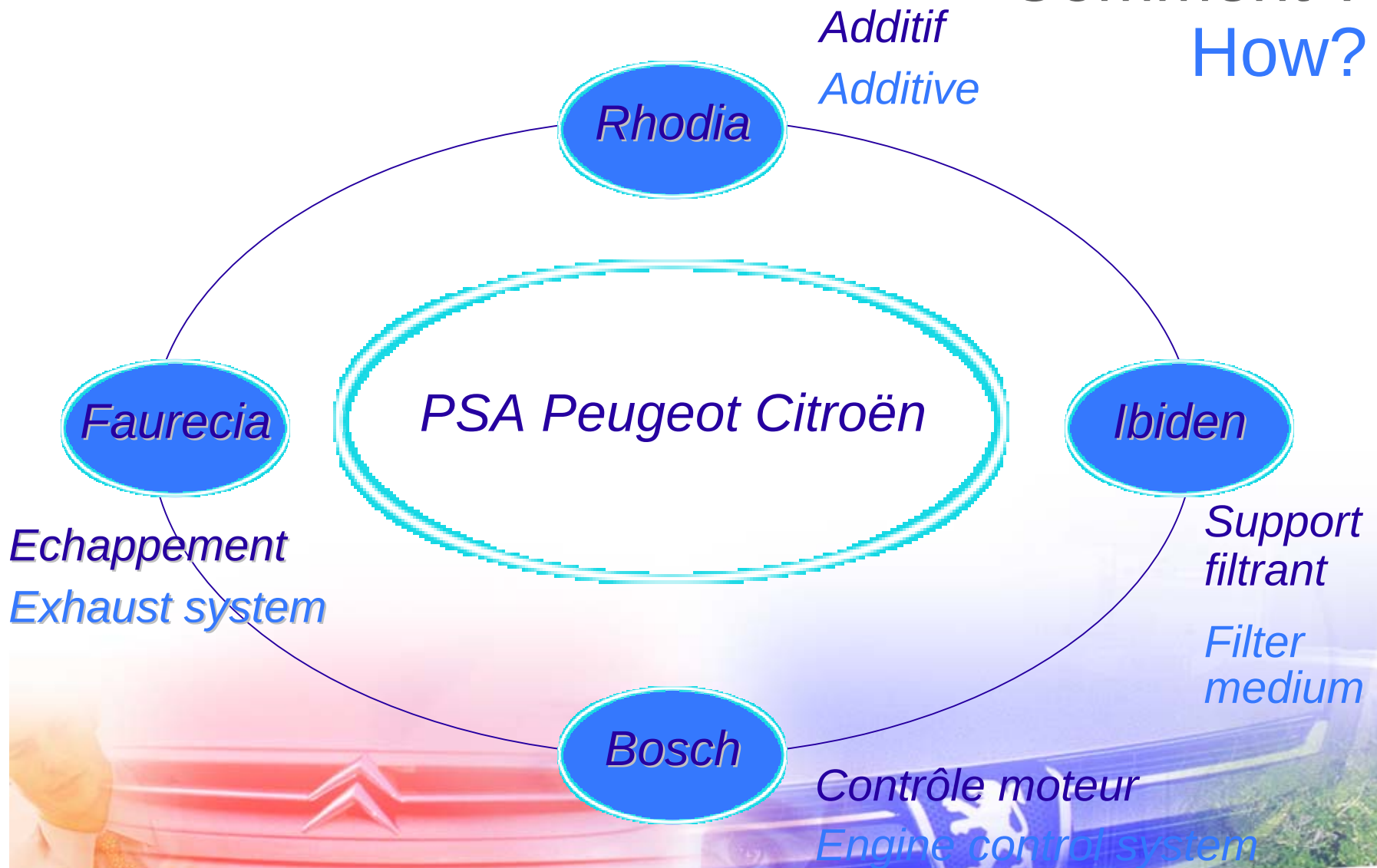


Image et croissance Image and growth

Etude FAP 2003 : taux de notoriété

2003 particulate filter study: awareness



Avez-vous entendu parler du FAP ?



Have you heard of the particulate filter?

93 % en Allemagne
in Germany

47 % en France
in France

La preuve par l'essai Test results

*Une validation par des organismes
indépendants*

Validated by independent organizations

ADAC ; MTC ; ROTOTEST ; QUATRORUOTTE ; ADEME...

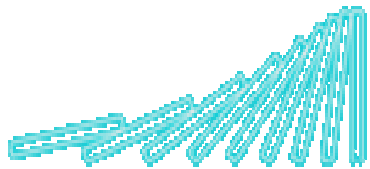


FAP™ - The PSA Technology



Éliminer les particules Eliminate the particulates

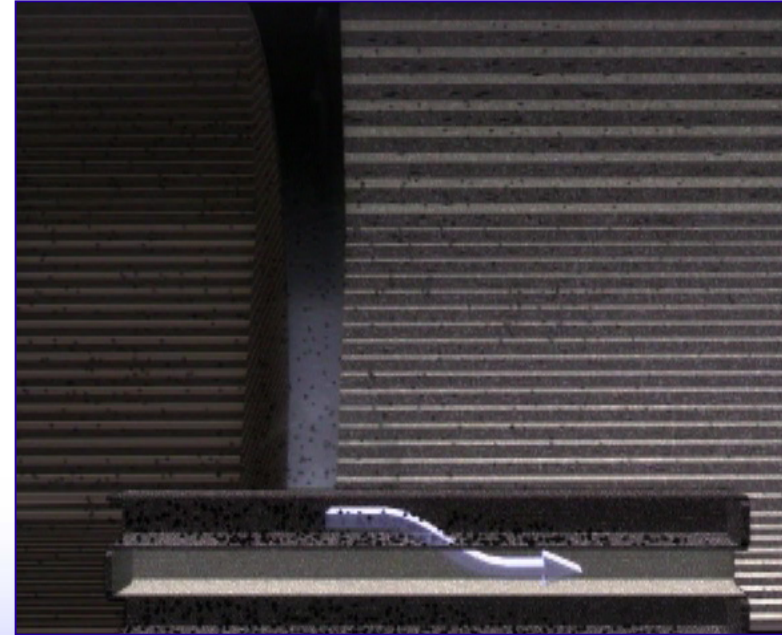
*Trois modes de combustion
Three types of combustion*



*En continu
Continuous*

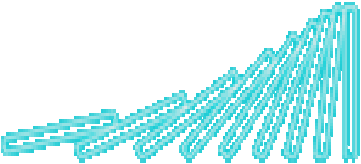
*Exhaust gas temperature
is high enough to burn all
particulates in the filter
as they are trapped*

*La température des gaz
d'échappement est
suffisamment élevée
pour consommer
les particules au fur
et à mesure dans le filtre*

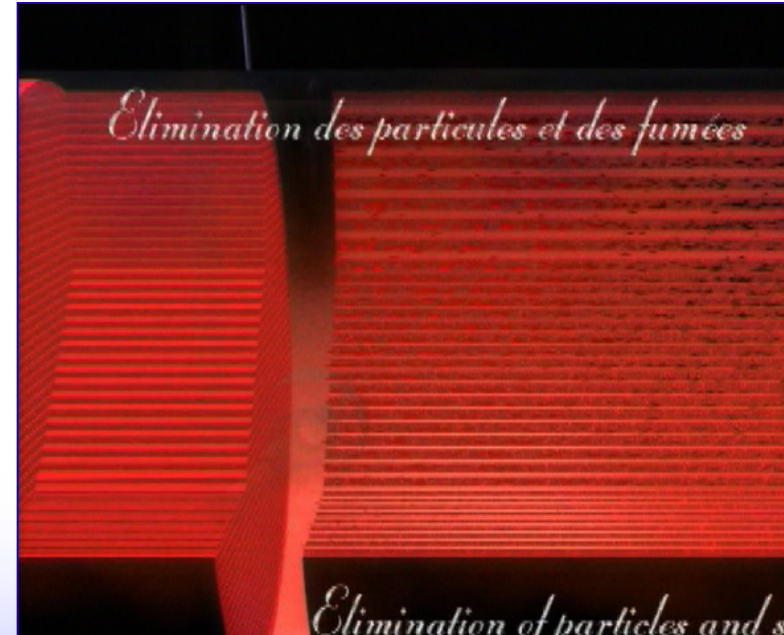


Éliminer les particules Eliminate the particulates

Trois modes de combustion
Three types of combustion

 *Séquentiel*
Sequential

Stockage et Régénération
Stored and burned



Éliminer les particules Eliminate the particulates

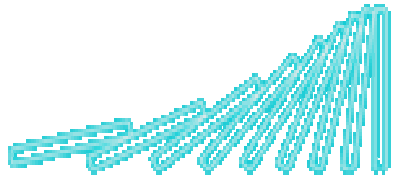
Trois modes de combustion
Three types of combustion

En continu
Continuous

Séquentiel
Sequential

Mixte
Mixed

Éliminer les particules Eliminate the particulates



*PSA Peugeot Citroën a choisi
le mode séquentiel*

*PSA Peugeot Citroën has chosen
the sequential mode*

Zéro particule

Zéro défaut

Zero particulate

Zero failure



Éliminer les particules Eliminate the particulates

*Pourquoi le séquentiel ? :
Why sequential?*

*Le mode séquentiel est le
seul capable de s'adapter
à toutes les conditions
de roulage*

*Sequential combustion is
the only method that can
adapt to all driving
conditions*

*A bas régime, faible charge,
(conditions urbaines)
aucun dispositif ne permet
d'éliminer les particules
sauf à dépenser
beaucoup d'énergie
(post-combustion permanente)*

*In city driving (low speed,
low load), no system can
burn all the particulates
without using considerable
amounts of energy
(continuous post-combustion)*

Éliminer les particules Eliminate the particulates

Catalyse de surface (FAP catalysé)
*Surface catalysis
(catalyzed particulate filter)*

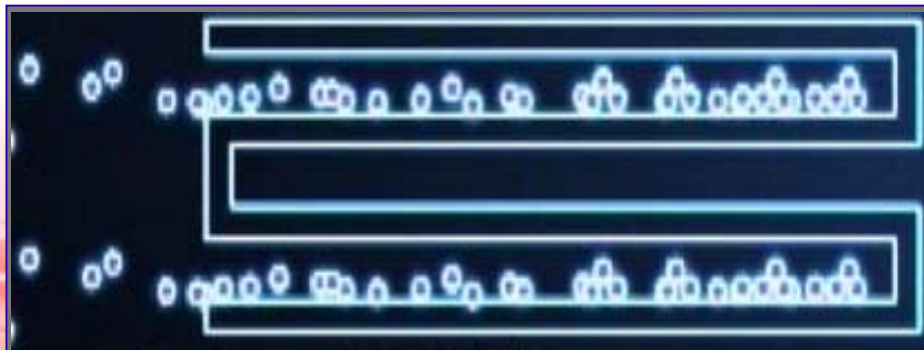


Catalyse de surface
Surface catalysis

canal filtrant *Filtering channel*

Le catalyseur vieillit. Efficacité moindre
The catalyst ages. Less efficient

Catalyse intégrée (FAP additivé)
Integrated catalysis (additive-enhanced particulate filter)



**Catalyseur neuf au cœur
de chaque particule**
*New catalyst at the center of
each particulate*

canal filtrant *Filtering channel*

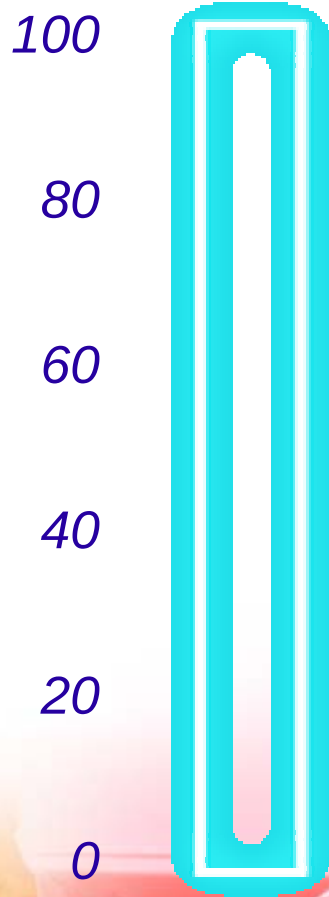
Nano particules de Ce/Fe
Ce/Fe nanoparticles

Le catalyseur toujours neuf. Efficacité accrue
The catalyst is always new. More efficient

Après 2 à 4 min
After 2 to 4 min

Eliminer les particules Eliminate the particulates

100%



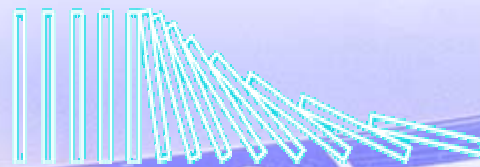
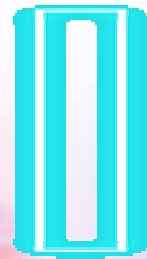
Après 6 à 8 min
After 6 to 8 min

50%



Après 10 min
After 10 min

20%



FAP Additivé
Additive-
enhanced DPF

FAP Catalysé
Catalyzed
DPF

Filtre Nu
Bare filter

Éliminer les particules Eliminate the particulates

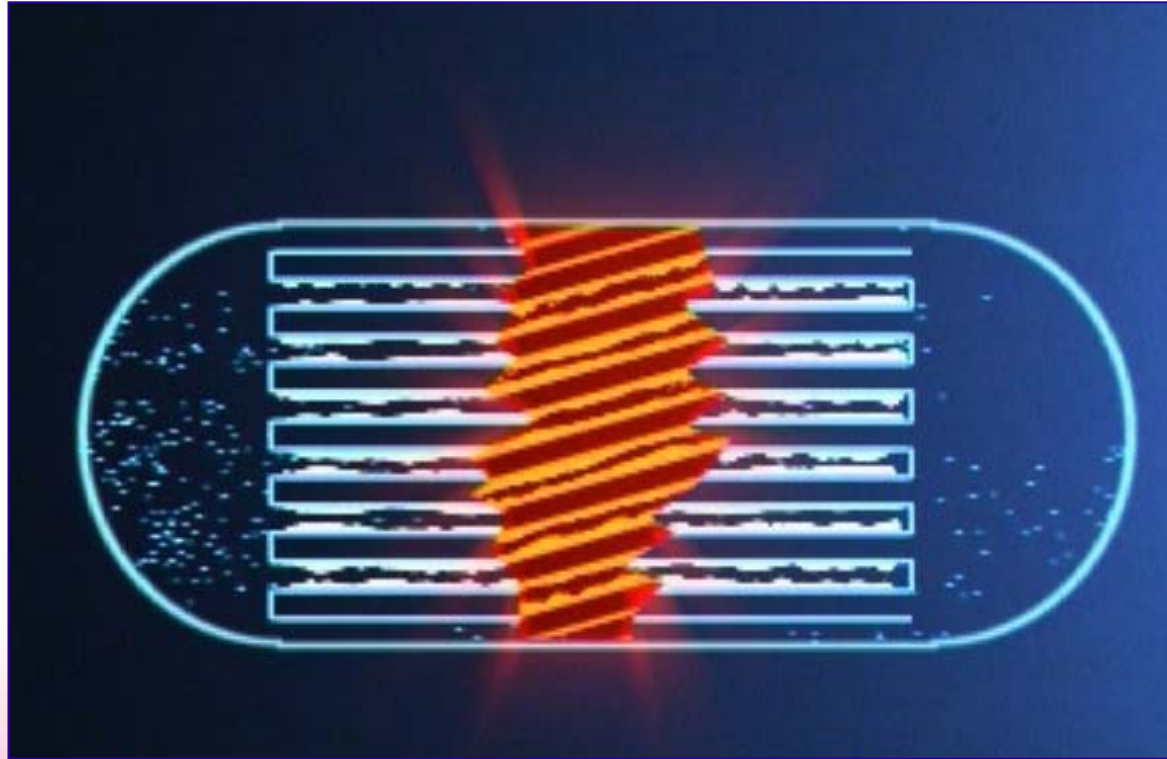
Colmatage
Clogging

+

Contre-Pression
Back-Pressure

=

**Combustion et
feu de cheminée**
*Combustion and
uncontrolled burn*



Éliminer les particules Eliminate the particulates

FAP ADDITIVE ADDITIVE-ENHANCED DPF

Régénération :

4 mn pour 30g de suies

Regeneration:

4 min for 30g of soot

FAP CATALYSE CATALYTIC DPF

Régénération :

20 mn pour 30g de suies

Regeneration:

20 min for 30g of soot



Éliminer les particules Eliminate the particulates

FAP ADDITIVE ADDITIVE-ENHANCED DPF

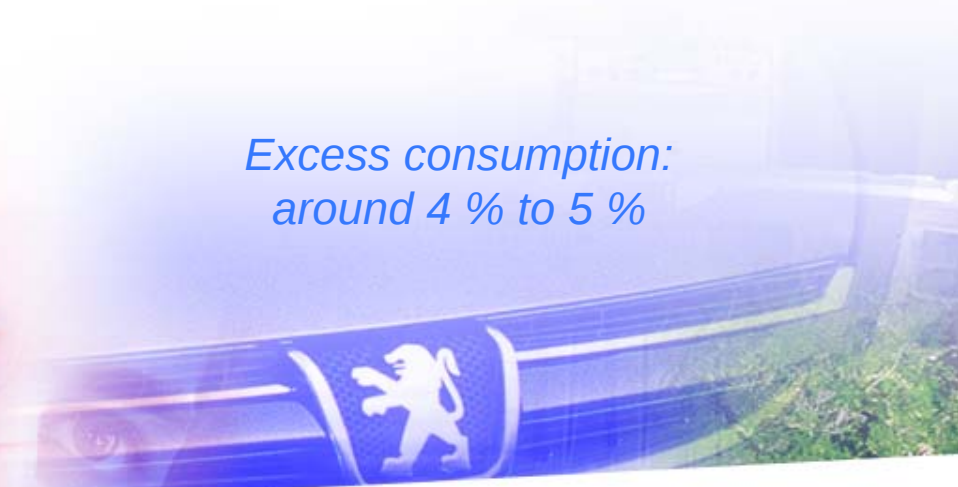
*Surconsommation :
environ **1 à 2 %***

*Excess consumption:
around **1 % to 2 %***

FAP CATALYSE CATALYZED DPF

*Surconsommation :
environ 4 à 5 %*

*Excess consumption:
around 4 % to 5 %*



Éliminer les particules Eliminate the particulates

FAP ADDITIVE ADDITIVE-ENHANCED DPF

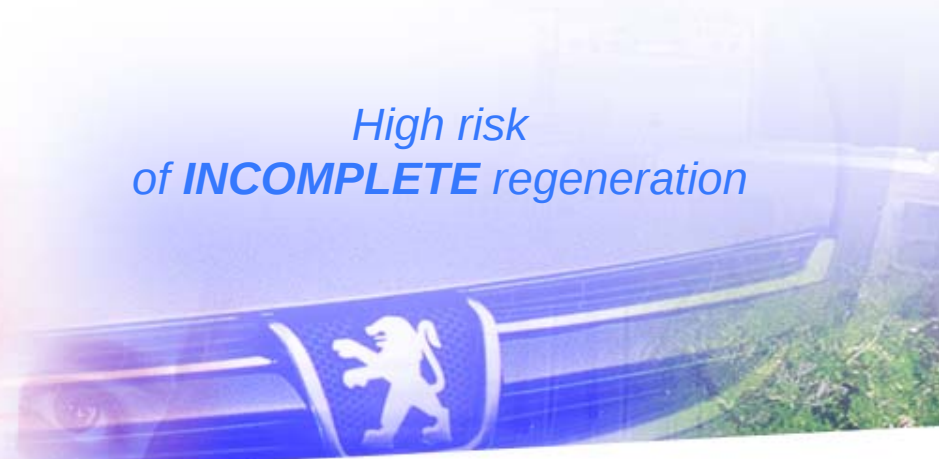
Régénération **COMPLETE**
garantie

COMPLETE regeneration
guaranteed

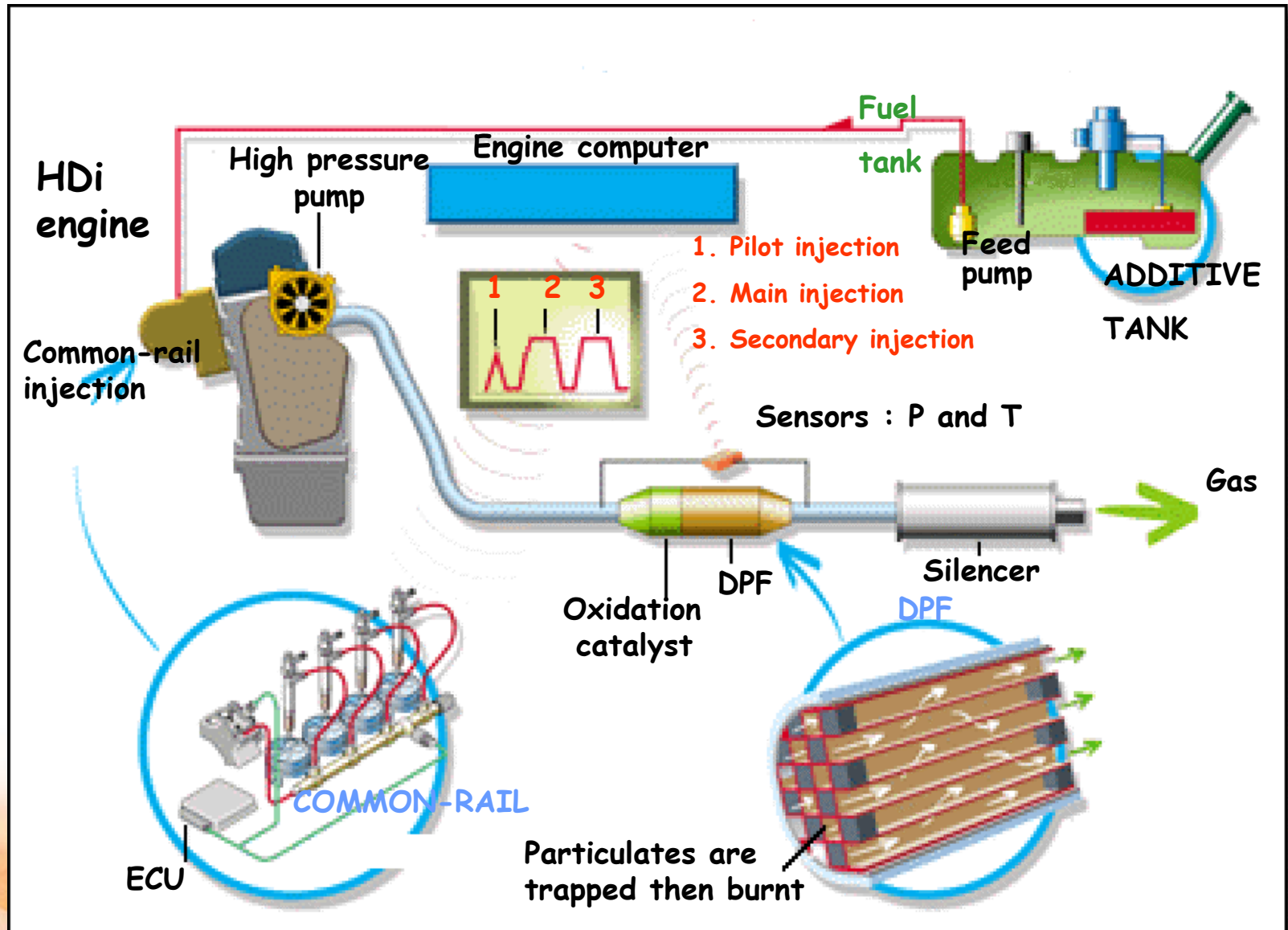
FAP CATALYSE CATALYZED DPF

Risque élevé
de régénération **INCOMPLETE**

High risk
of **INCOMPLETE** regeneration

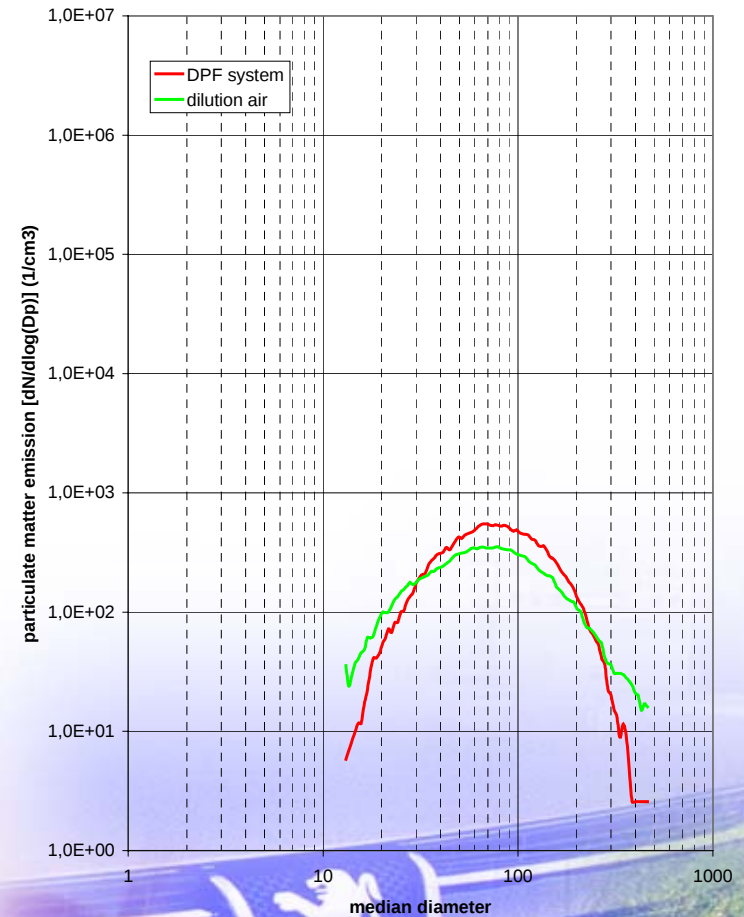
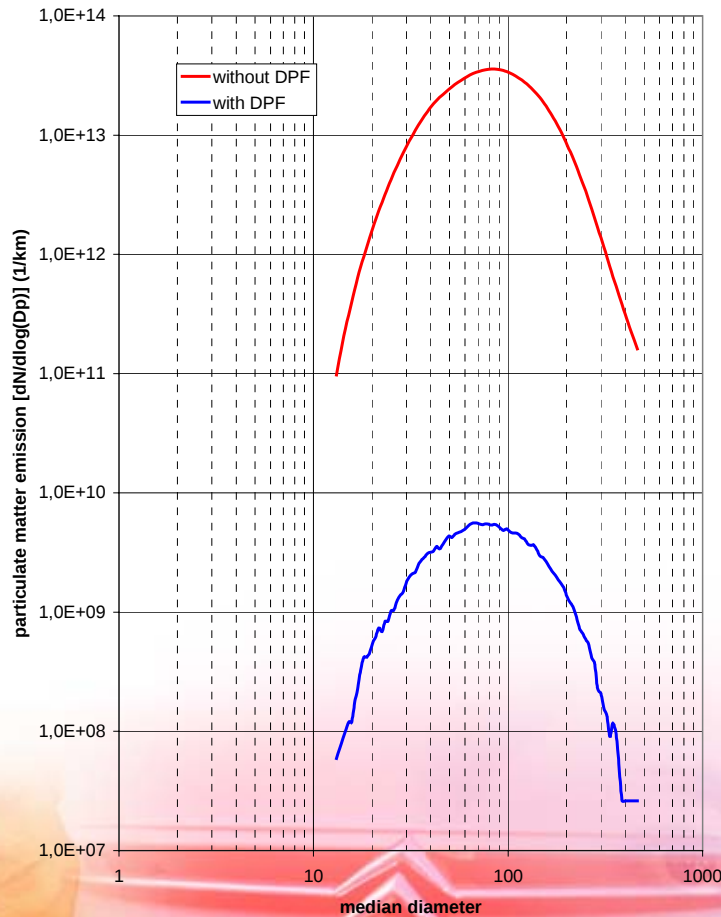


DIESEL PARTICULATE FILTER SYSTEM



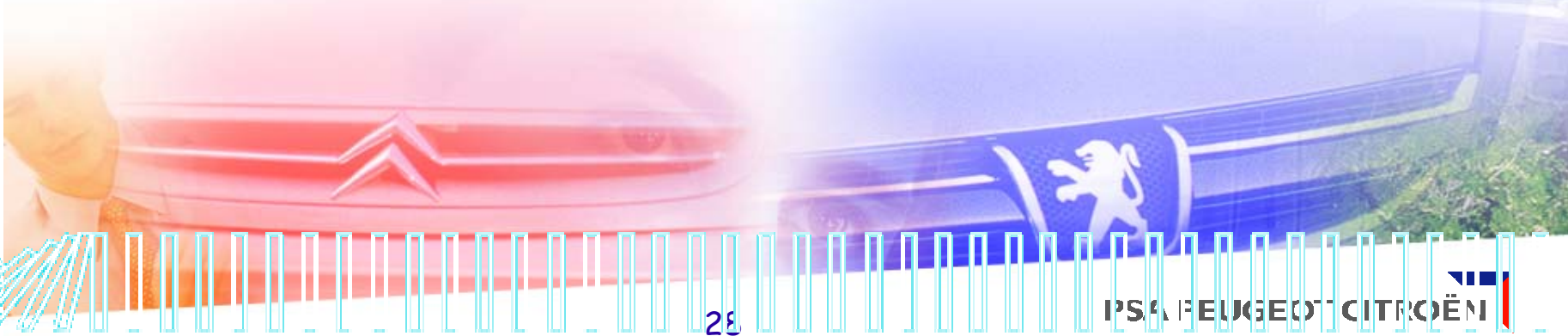
DPF SYSTEM PERFORMANCE

406 Diesel 70 kph in 5th gear



SMPS measurements

L'entretien *Servicing*



Entretien Servicing

*Hier
Yesterday*

*Aujourd'hui
Today*

*Demain
Tomorrow*

80 000 km

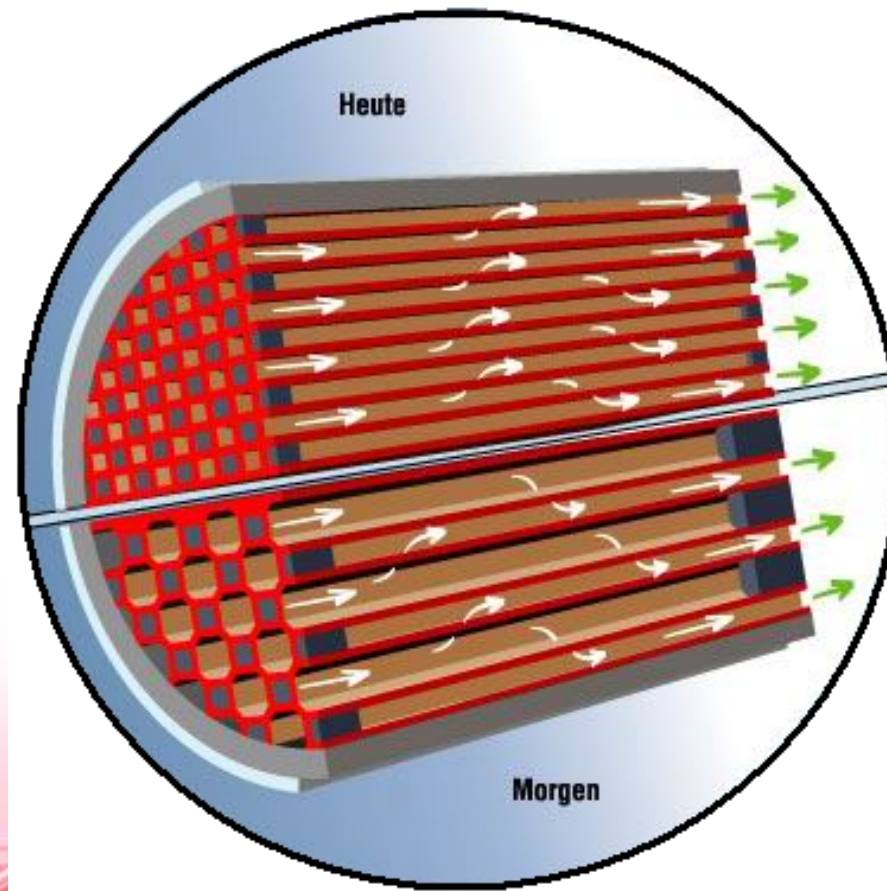
~120 000km

*Sans entretien
without servicing*



FAP Additivé sans entretien

Additive-enhanced DPF without servicing



500000 FAP : une étape 500000 FAP : a milestone

- **Une technologie confirmée : Le FAP additivé.**
An established technology : the additized FAP.
- **Une technologie qui évolue : le FAP sans entretien.**
A technology in constant progression : The maintenance free FAP.
- **Une technologie qui réconcilie le Diesel et l'environnement.**
A technology reconciling Diesel and environment.

