

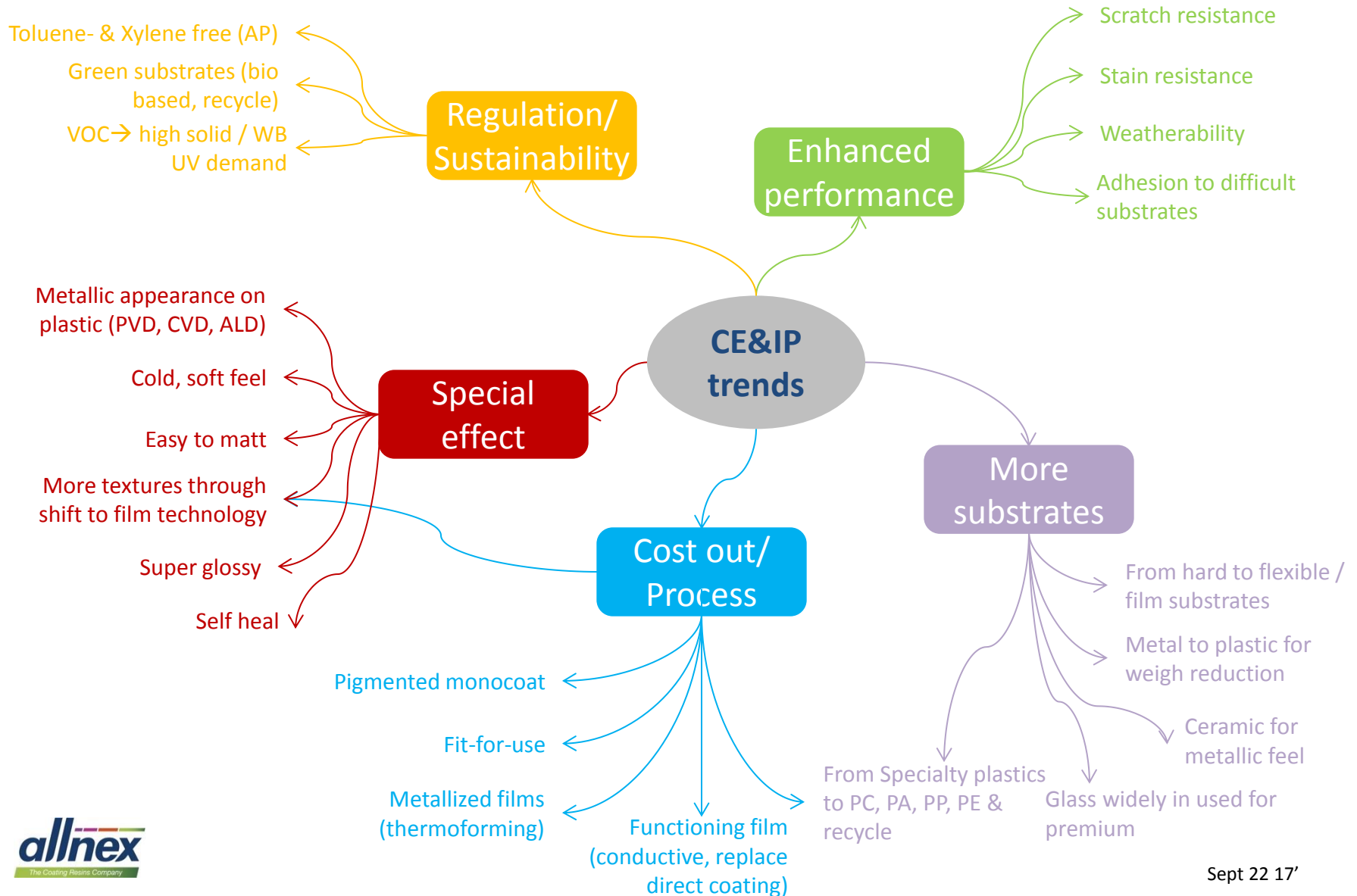
# Automotive Interior

CE&IP segment

2017/08/09



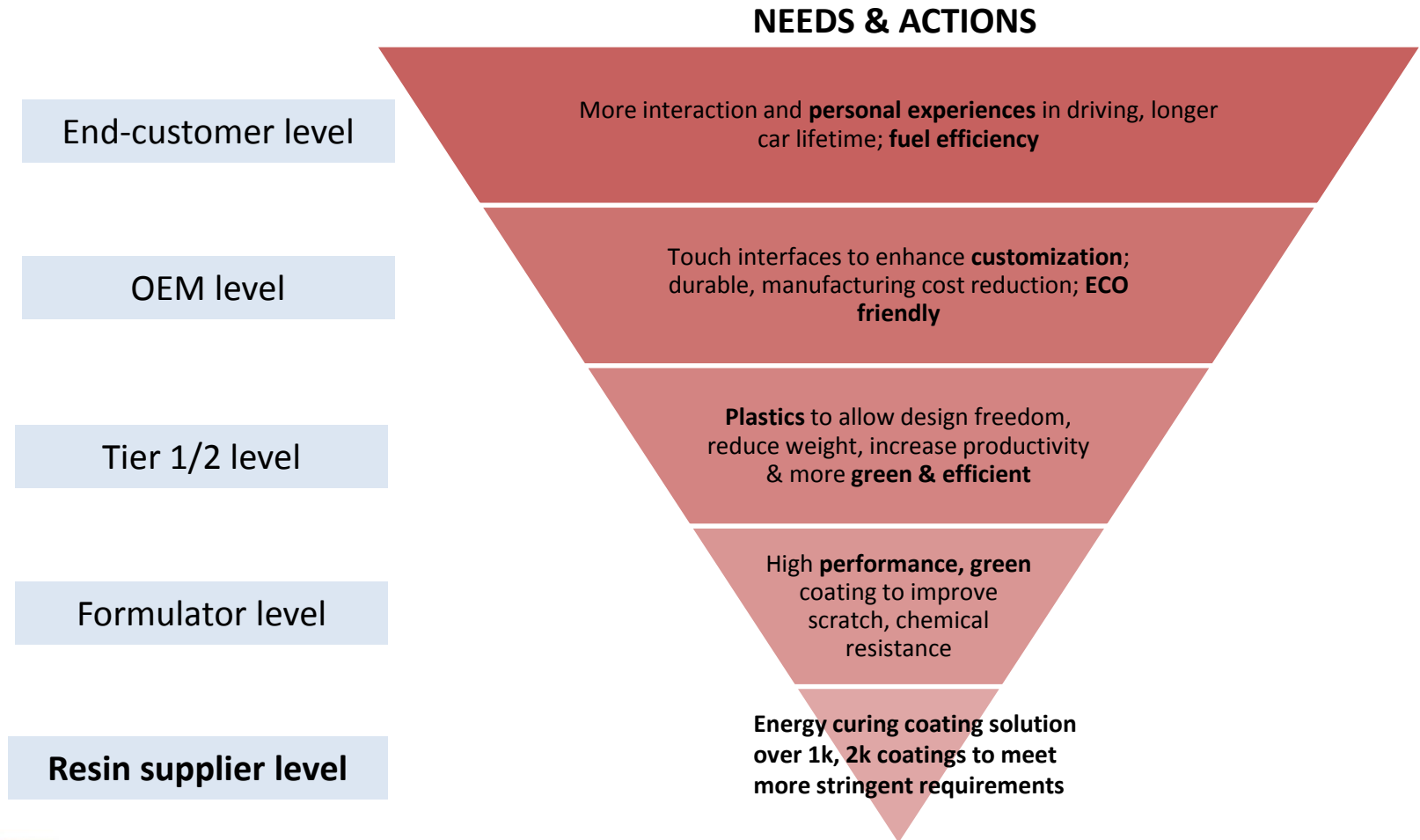
# Key trends in CE&IP



# Automotive interior introduction

Automobiles have become more of an extension of their drivers.

The change in the market demand, drive the players in the value chain to take different actions

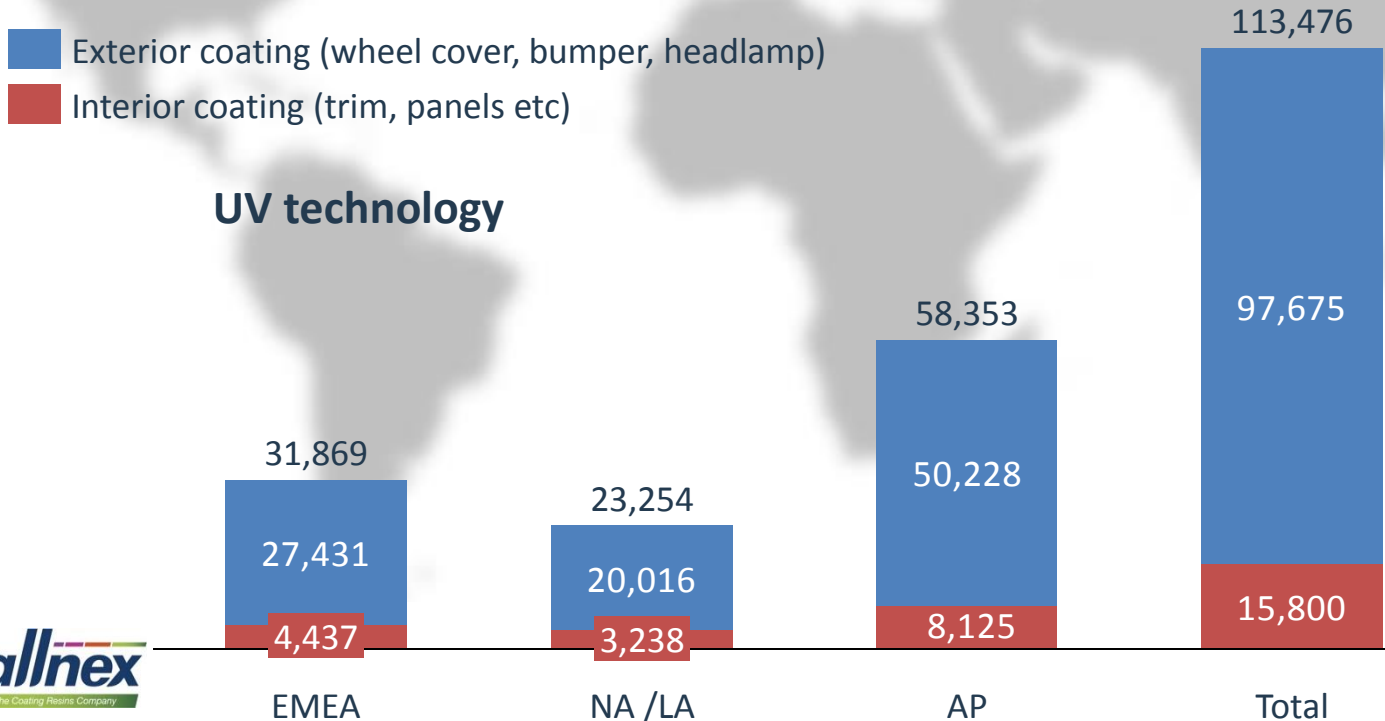


# Auto interior market analysis

According to the Plastics Coating public report

- Total plastics coating market for Auto is ~718.2kMT. UV technology take ~15% of total coating

Market Segment	UV	1k WB	2k WB	1k SB	2k SB
Automotive	15%	8%	14%	13%	50%
Trucks & Buses (interior)	17%	11%	14%	16%	42%
Motorcycles (WB primer, SB CC)	3%	12%	22%	18%	46%



# Benefit of UV technology for auto interior coating

UV technology for automotive interiors coating with its advantage over thermal conventional coating:

## Performance

- Achieve Harsher auto specifications in chemical & stain resistance, abrasion resistance & weathering

## Environment

- More energy saving
- Environmental friendly with VOC reduction

## Manufacture

- Faster & stable throughput,
- Occupy less space & time in production
- Manufacturing cost saving

## Substrate

- More flexibility on substrates option
- Less sensitive to heat
- Eliminate pre-treatment or primer

# Benefits of dual cure

## UV initiated free radical polymerization

Productivity, fast cure, low temperature processing  
Reduce solvent / solvent free content for eliminating VOC  
Improve scratch & chemical resistance  
Uncured of part that is inaccessible UV rays especially 3D shape  
Reduce adhesion and flexibility due to the shrinkage during curing

## Thermally initiated poly-addition reaction

Full cure for difficult shape of part  
Lower shrinkage in the process  
Layers of coating process consume space and time  
Slow cure, high temperature processing  
High energy consumption for drying

Short time curing improves the surface appearance with open to dirt for less time  
Lower shrinkage make the film more flexible with better adhesion  
Poly-addition improves the curing for UV inaccessible areas  
Less production floor space for the traditional layers of coating system

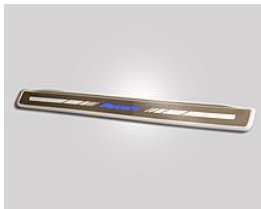
# Key applications



Headliner  
Shield the vehicle ceiling



Trims & hand grip  
Improve appearance of interior



Scuff plate ornament  
Cover steel step area



Dashboard  
Control panel of car

## UV application in the market:

# General Motors and Toyota

# 100% UV on ABS for Renault, Volkswagen and Daimler

# Application technology

- Spray technology



Direct spray coating for color effect



 Direct spray coating on the plastics parts  
The Coating Resins Company

- Film technology

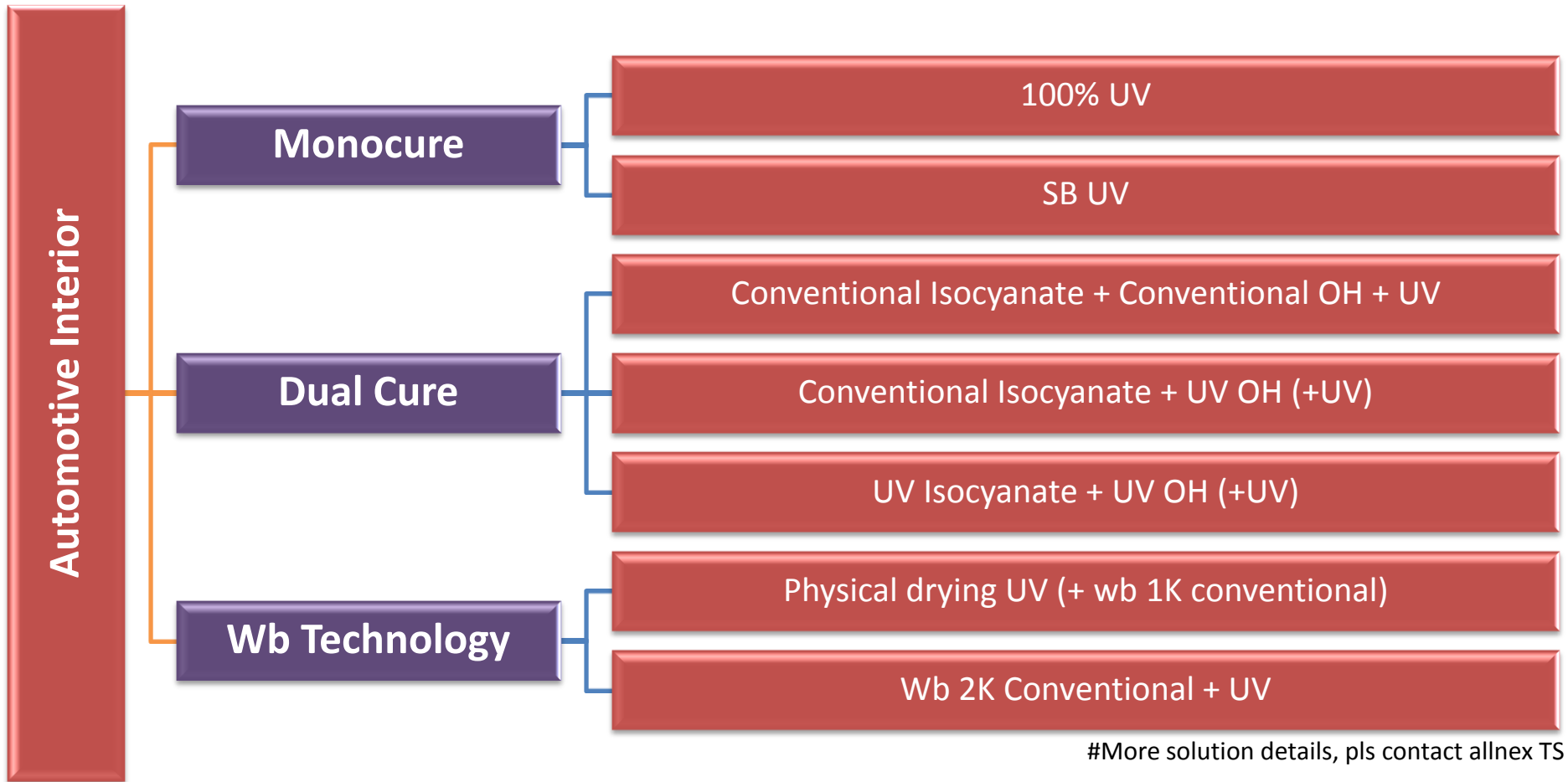


Thermoforming the shape with coated films



Coated film on plastics to provide textures

# UV technical solution



#More solution details, pls contact allnex TS

## Customer has preference towards different UV technology:

Monocure (SB/100%): less curved surface, short process time

Dual Cure: Pigmented & curved surface; film thermoforming; match with original process

WB UV: VOC regulation push; with WB process available