

ATO/DAS over ETCS

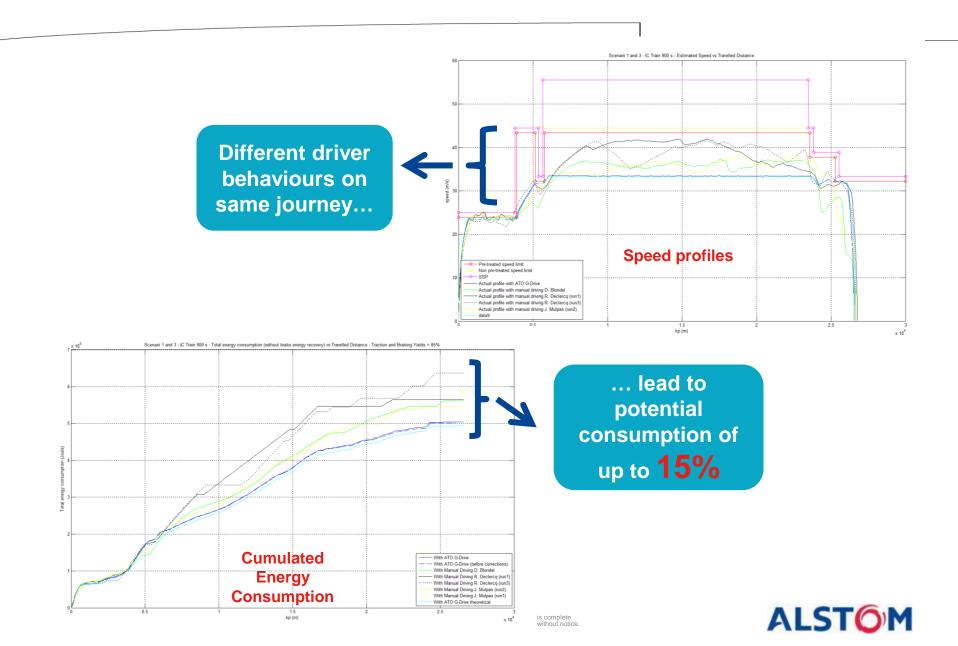
### The way towards unattended operation for Main Lines

Benoît **BIENFAIT** 

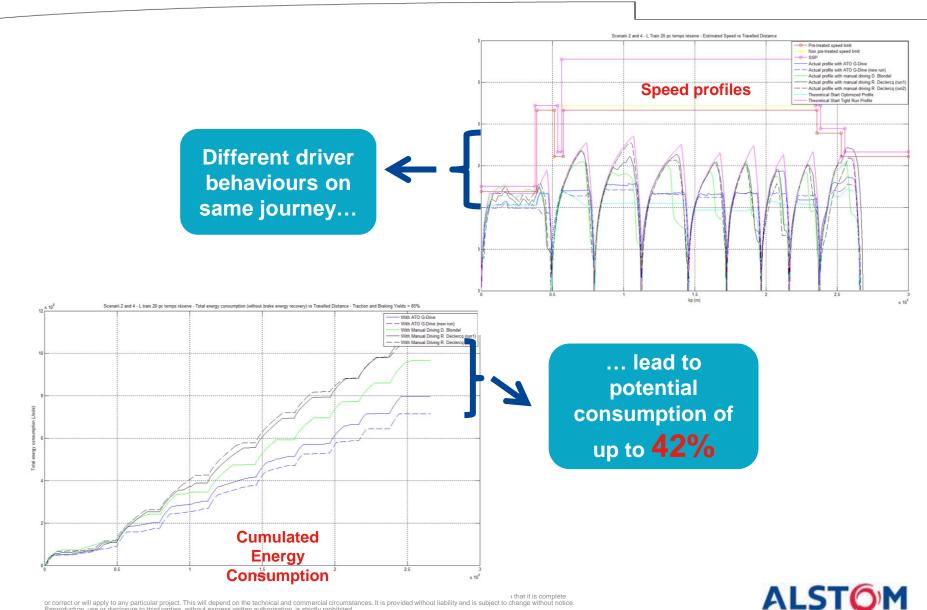
February 2017



# Example of Energy Savings – Intercity trains



## **Example of Energy Savings – Local trains**



or correct or will apply to any particular project. This will depend on the technical and commercial circumstances. It is provided without liability and is subject to change without notice. Reproduction, use or disclosure to third parties, without express written authorisation, is strictly prohibited.

# **Example of Capacity Improvements**

- Case Study: Brussels Junction (North-South)
  - 6 parallel tracks, diverse rolling stock
  - Today capacity limited to 92 trains / hour
  - 1 « free » slot required every 4 trains to maintain stability.

## With ATO introduction:

- Stability ensured for all runs
- Same travel time for all train types
- No more « free » slot required
- Capacity increased to 120 trains/h

ALS

					sillons disponibles (compte tenu des sillons de respiration) Ga							
	Espacement	Temps	Sillons	Sillons								
	entre les sillons JNM	d'arrêt FBCL	potentiels	de respiration	Voie 1	Voie 2	Voie 3	Voie 4	Voie 5	Voie 6	Tot	
Situation actuelle	180	60	20	4-R-4-R	15	15	16	16	15	15	92	
Hypothèse 1	120	60	30	4-R-R-4-R-R	18	18	20	20	18	18	112	22%
Hypothèse 2	120	60	30	4-R-4-R	22	22	24	24	22	22	136	48%
Hypothèse 3	150	60	30	2-R-2-R	18	18	20	20	18	18	112	22%
Hypothèse 4	150	90	24	4-R-4-R	17	17	19	19	18	18	108	17%
Hypothèse 5	150	90	24	5-R-5-R	18	18	20	20	19	19	114	24%
ATO	180	60	20	Marge incluse	18	18	20	20	18	18	112	22%
ATO 2	180	60	20	Marge incluse	20	20	20	20	20	20	120	30%
Utilisation réelle actuelle départ FBMZ ou FBN entre 7h30 et 8h29 (Thalys compris)					15	14	16	16	14	10	85	



#### ALSTOM - 22/02/2017 - P 13

© ALSTOM SA, 2015. All rights reserved. Information contained in this document is indicative only. No representation or warranty is given or should be relied on that it is complete or correct or will apply to any particular project. This will depend on the technical and commercial circumstances. It is provided without liability and is subject to change without notice. Reproduction, use or disclosure to third parties, without express written authorisation is strictly prohibited.