

ATO/DAS over ETCS

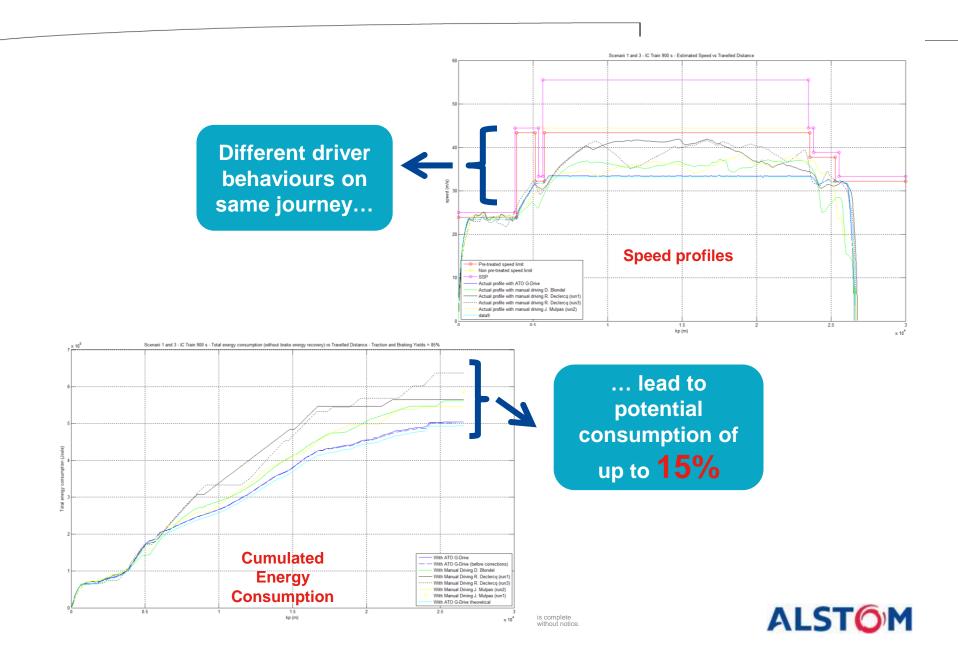
The way towards unattended operation for Main Lines

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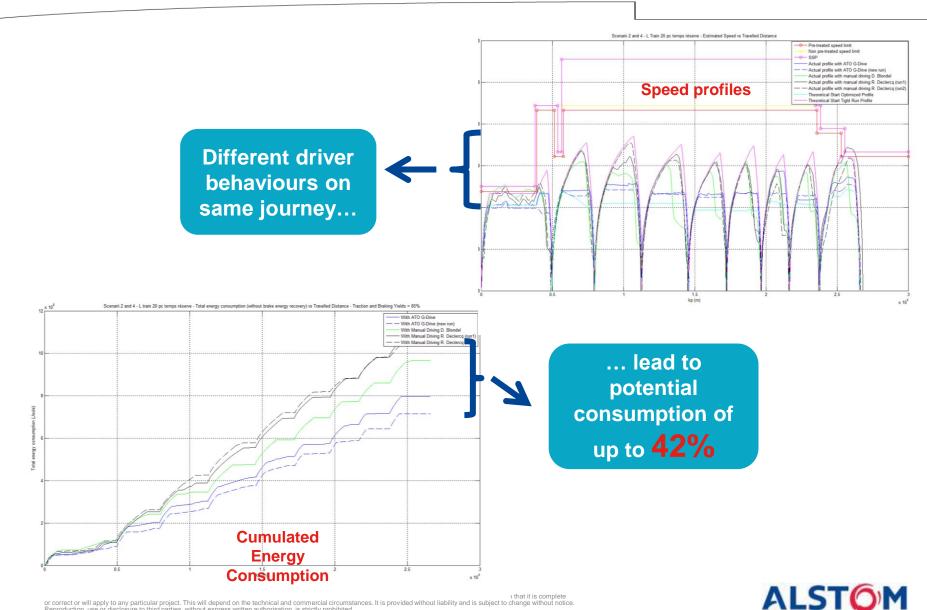
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Example of Energy Savings – Intercity trains



Example of Energy Savings – Local trains



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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

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					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	



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