



Fixed Link Performance Regime summary 2018

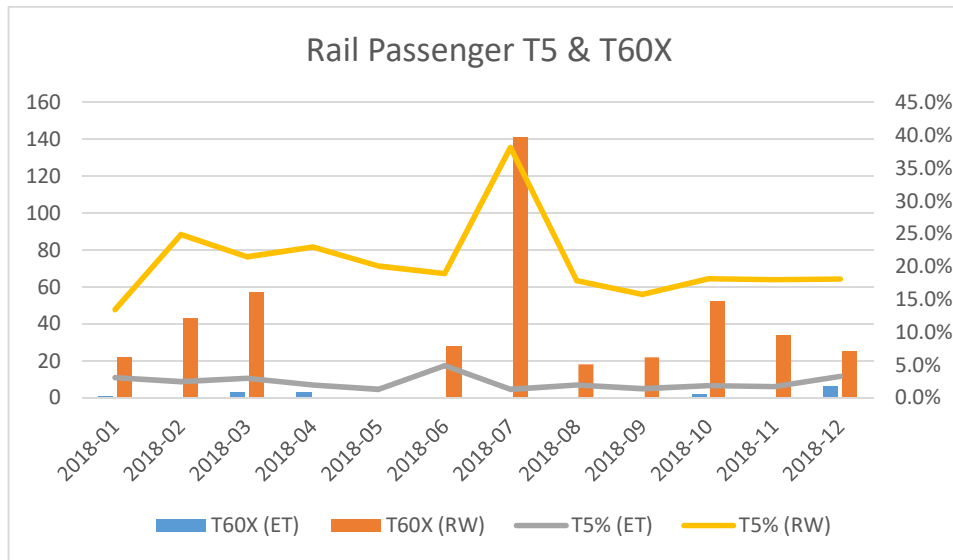
(Document de Référence du Réseau/Network Statement par.7)

11/6/2019

Channel Fixed Link: an integrated road & rail transport system, financed & built by private Concessionnaires

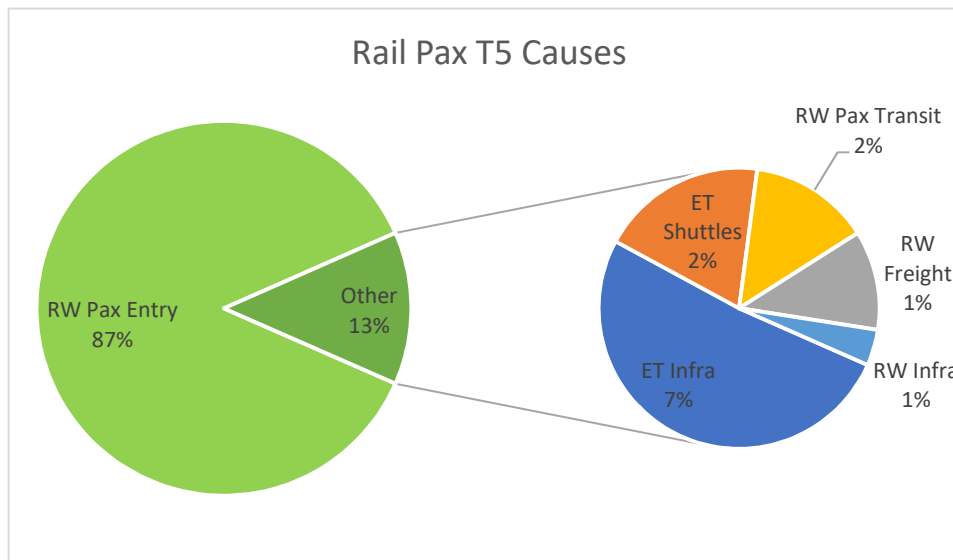
Fixed Link Performance Regime

Rail Passenger Performance 2018



R.Pax incurred	2016	2017	2018
T5% (ET)	3.3%	2.8%	2.3%
T5% (RW)	16.8%	16.2%	20.8%
T60X (ET)	71	72	59
T60X (RW)	304	233	513

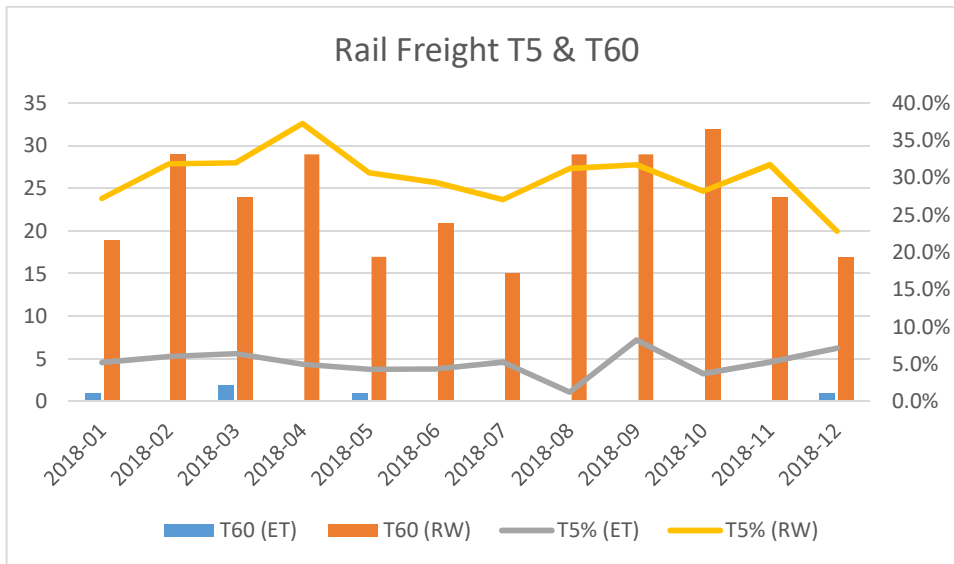
Tx = delay over x minutes at Fixed Link exit (incl. entry+transit)
 Tx(ET) = delay for all Eurotunnel causes (incl. infrastructure & shuttles)
 Tx(RW) = delay for all railway causes (incl. upstream IMs, stations, operator)
 RW.Pax Transit = delay for R.Pax causes (operator) within Fixed Link



R.Pax caused	2016	2017	2018
T5% Shuttles	1.4%	1.0%	1.7%
T5% R.Freight	0.9%	0.5%	0.7%
T60X Shuttles	116	84	216
T60 R.Freight	3	3	6

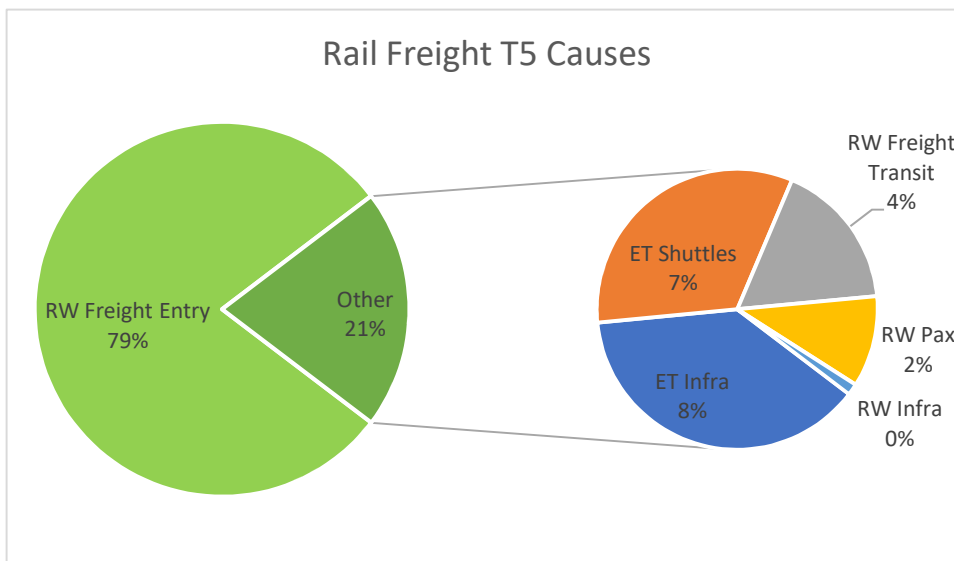
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Rail Freight Performance 2018



R.Frt incurred	2016	2017	2018
T5% (ET)	3.1%	2.8%	5.2%
T5% (RW)	32.5%	25.8%	30.2%
T60 (ET)	12	11	5
T60 (RW)	209	213	285

Tx = delay over x minutes at Fixed Link exit (incl. entry+transit)
 Tx(ET) = delay for all Eurotunnel causes (incl. infrastructure & shuttles)
 Tx(RW) = delay for all railway causes (incl. upstream IMs, yards, operator)
 RW.Freight Transit = delay for R.Freight causes (operator) within Fixed Link



R.Frt caused	2016	2017	2018
T5% Shuttles	0.6%	0.9%	0.9%
T5% R.Pax	0.2%	0.2%	0.4%
T60X Shuttles	9	147	172
T60 R.Pax	1	0	19



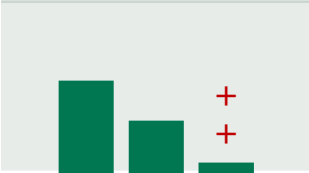
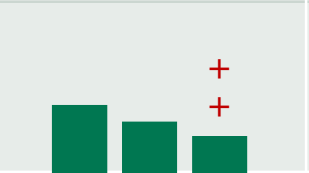
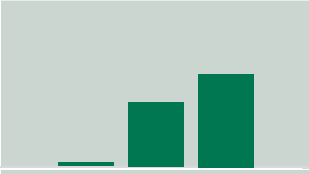

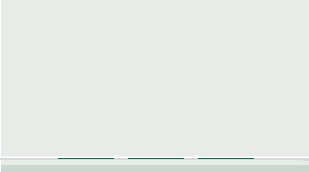
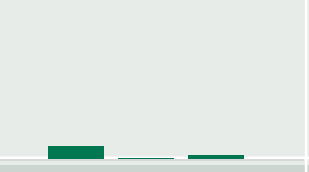




Fixed Link Performance Regime

Main Incidents & Delay Causes 2018

Eurotunnel Causes	Railways Causes
<p>ET - Major T60 incidents in 2018</p> <ul style="list-style-type: none"> • 24/6: EMS P.Supply RTU malfunction (40 Rpax) 	<p>Rail Freight - T60 incidents in 2018</p> <ul style="list-style-type: none"> • 30/4: RFreight 4314 loco (18 Sh) • 10/5: RFreight 4501 loco (21 Sh) • 15/10: RFreight 4426 brake (67 Sh, 10 RPax) • 10/11: RFreight 4360 coupling (26 Sh, 1 RP) • 24/11: RFreight 4430 loco (6 Sh)
<p>ET - Other ET T60 incidents in 2018</p> <ul style="list-style-type: none"> • 19/3: Catenary damage FR term. (3 RP, 2 RF) • 6/6: Signalling CDV fault (2 RP) • 9/12: Trespasser Int.5 6489 (4 RP, 1 RF) 	<p>Rail Freight - Other incidents in 2018</p> <ul style="list-style-type: none"> • Mar/Apr/May/Jun: SNCF strike disruption • Jan/Feb/Aug/Sep/Oct/Nov: resource issues
<p>ET - Top causes of Infra T5 delays 2018 (vs.2017)</p> <ul style="list-style-type: none"> • Catenary & Power supply: 25% (37%) • Signalling & Control systems: 42% (34%) • Works train & speed restrictions: 10% (11%) • Infra Operations RCC & Security: 20% (8%) 	<p>Rail Pax - T60 incidents in 2018</p> <ul style="list-style-type: none"> • 24/1: RP Velaro traction/SVC (16 Sh) • 6/2: RP 9007 Vacma (14 Sh, 2 RF) • 15/4: RP 9010 fire alarm CVS (22 Sh) • 28/6: RP 9055 Hot Box detection (15 Sh) • 22/9: RP Velaro traction/SVC (25 Sh) • 2/11: RP Velaro traction/SVC (16 Sh) • 4/11: RP Velaro traction/SVC (32 Sh) • 7/11: RP Velaro traction/SVC (16 Sh) • 12/11: RP Velaro traction/SVC (9 Sh) <p>Rail Pax – Other incidents in 2018</p> <ul style="list-style-type: none"> • Mar/Apr/May: SNCF strike disruption • Jul: series of incidents 4/7-10/7 (Paris, etc.)

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Trends & Improvement Initiatives 2018

Infra Systems	T60 trend	T5 trend	Performance Improvement Initiatives
Track System			<ul style="list-style-type: none"> • Rail Renewal (2014-2016) • Points Renewal (on-going programme) • Track base monitoring • Measurement Train
Catenary & Power Supply			<ul style="list-style-type: none"> • Catenary reinforcement programme (2015-2019) • Traction Supplies Balancer/SVC Renewal • software patch (2016-2017), renewal (2017-2020) • Measurement Train
Signalling & Control Systems			<ul style="list-style-type: none"> • Radio Systems Renewal [GSM-R] (2010-2018) • Signalling Systems Obsolescence & Renewal [ERTMS] • studies (2017-2020), renewal (~2021~2026) • Fire Detection Renewal, Control Systems, Measurement Train
M&E & Civils			<ul style="list-style-type: none"> • PLCs Renewal • Cross-Over Doors monitoring
Maintenance Works Train			<ul style="list-style-type: none"> • Measurement Train (=> Track, Catenary, Signalling, etc.) • Works train Schöma shunter Renewal (2018-2021) • Works train tunnel cleaning modules Renewal
Infra Operations RCC & Security			<ul style="list-style-type: none"> • Security Reinforcements (2015-2016) • Security Command Centre [PCS Coquelles] • Rail Freight Scanner [Fréthun] (2017-2019)