

Recent Light rail developments in France

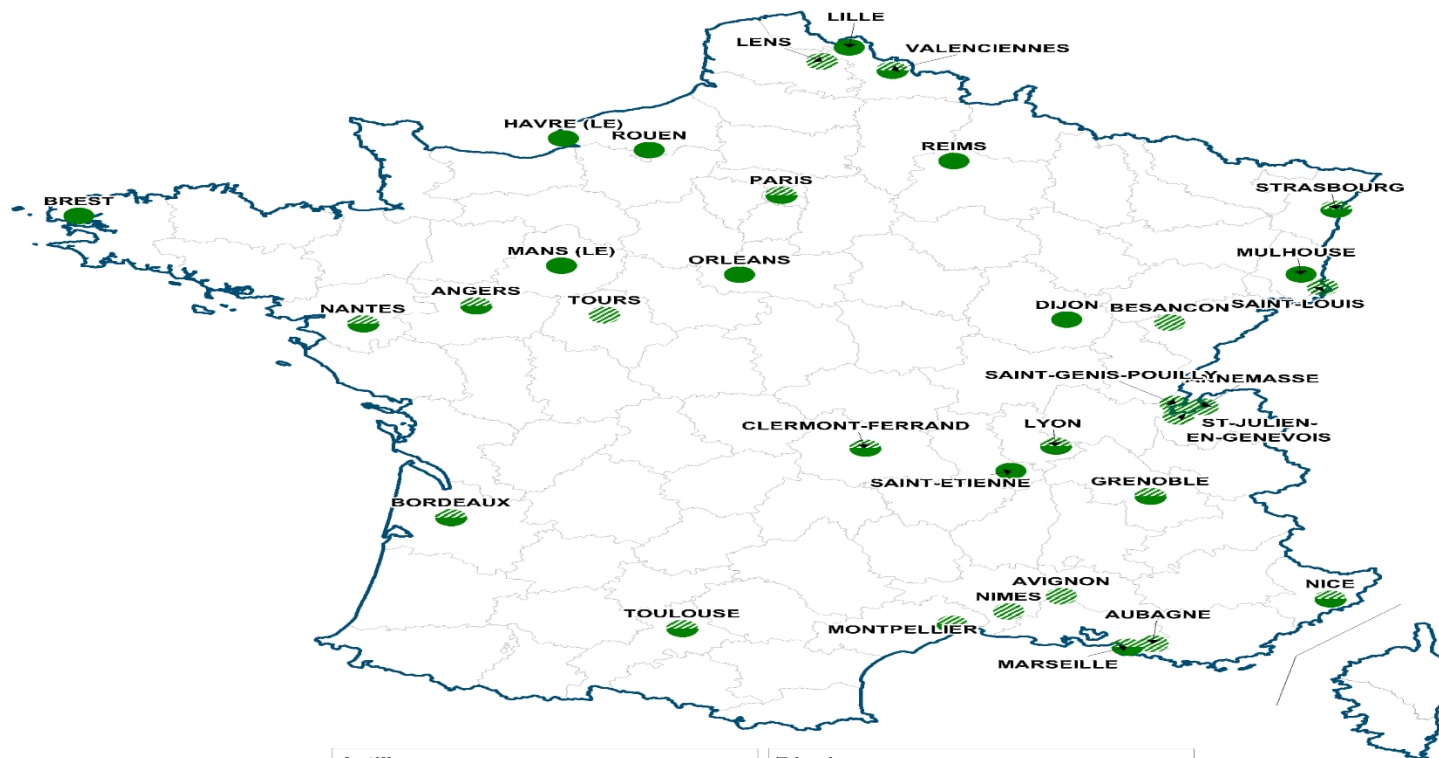


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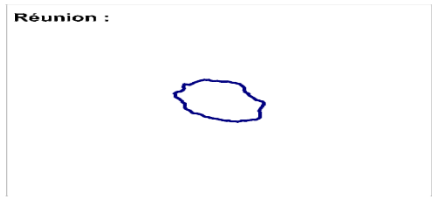
- **French LRT : current situation end of 2012**
- **What's up in 2014**
- **networks in provinces : production and ridership**
- **Focus on Paris region**
- **Key facts of recents developments**

Sources : CEREMA, STRMTG, STIF

French LRT : current situation (end of 2012)



23 networks
55 lines
619 km (371 miles)
1104 cars



Source : Certu
Réalisation : Certu / DD - Janvier 2013

French LRT : current situation (end of 2012)

Most of big cities have got streetcars systems

Most of networks are in medium urban areas

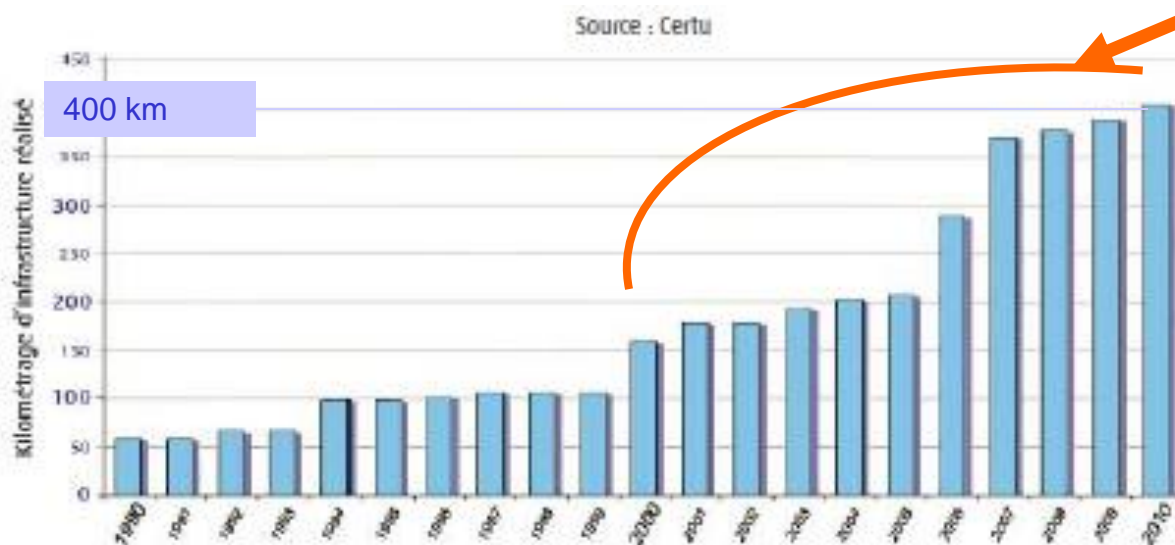
PT area inhabitants (x1000)	Total number of networks	Networks with tram	Total length of tram lines
100 – 200	47	1	15 km
200 – 350	19	9	153 km
350 – 500	8	5	172 km
500 – 1 000	5	4	108 km
1 000 – 2 000	3	3	108 km
<i>Paris region</i>		<i>4lines</i>	<i>63 km</i>

More and more smaller towns are implementing (or thinking about) it

Still many projects (out of Paris region) : *new networks + extensions*

reminder: former developments

A great increase over last 20 years...



Between 2000 & 2010
 Networks with LRT X2
 Number of Km X 3
 LRT's Ridership X 4

Still going on last years...

Total length of streetcars lines from 1990 to 2010

What's up at the end of 2014

- **26** networks (25 in provinces + Paris region)
- **62** lines
- **760** kilometers (456 miles)
- **1311** cars

New things in 2013 -2014 :

- 1st line in Tours, Besançon, Aubagne
- Additional lines in Grenoble, Le Mans, Valenciennes, Paris region (T5, T6, T7, T8)
- extensions in Bordeaux, Clermont Fd, Grenoble, Lyon, Nice, Toulouse

Networks in provinces (end of 2014)

- **diverse Public Transport areas**

=> from Aubagne (105 000 inhab.)

to Lyon (1 355 000 inhab.)

- **various size of networks**

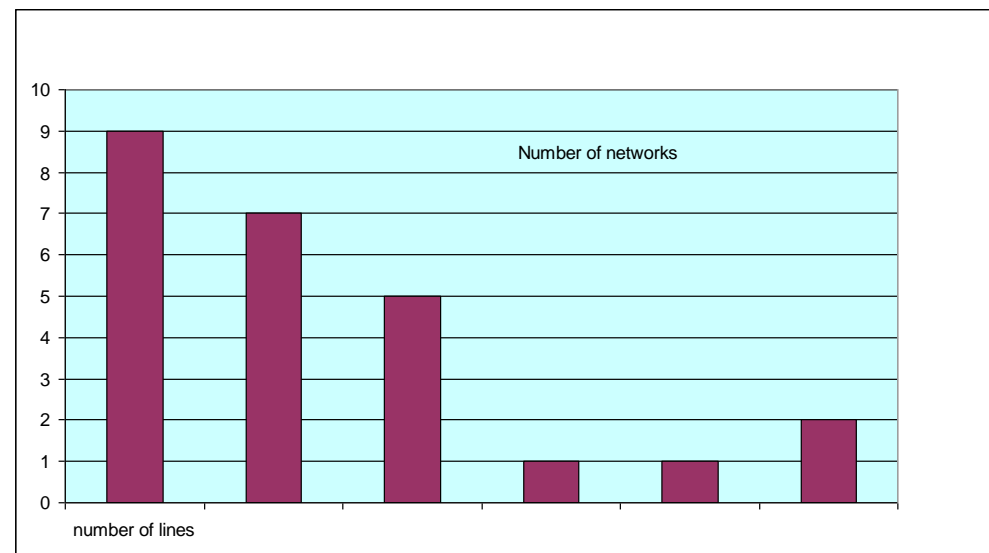
=> from Aubagne (1 line, 7.2 km)

to Lyon, Strasbourg (6 lines)

- **various length of lines**

=> from Grenoble (5 km)

to Bordeaux (20 km)



Still a few projects going on...

French LRT : current projects (end of 2014)

New networks : Avignon ?, Caen* ?, Nîmes ?

* *Conversion of Guided BRT + 2nd line*

New lines in existing networks :

Angers, Bordeaux, Nice, Montpellier ?, Paris region, ...

Extensions of lines :

under works : Annemasse (Genève)*, Bâle*, Bordeaux, ,
Strasbourg**, Toulouse

projects : Grenoble, Le Mans, Genève*, Tours, Paris, ...

* *Swiss networks* ** *in Germany*

Production and ridership (provinces, year 2013)

City/Region	Urban area Population	Open	Urban area			LRT				%LRT/PT network		
			Km	Miles	Cars	travels X1000(y)	km run x1000 (y)	km x places x1000(y)	Trav / km	travels	km run	km x places
Angers	216 000	2011	12,3	7,4	17	8 365	905	260 642	9,2	25,4%	8,5%	20,5%
Bordeaux	835 000	2003	43,4	26,0	74	74 743	4 655	1 335 188	16,1	61,0%	14,0%	35,3%
Brest	201 000	2012	14,3	8,6	20	10 609	1 144	228 701	9,3	42,9%	14,3%	24,3%
Clermont-Ferrand	260 000	2006	16,3	9,8	26	14 564	1 049	230 786	13,9	50,4%	13,3%	23,9%
Dijon	250 000	2012	20,0	12,0	33	20 218	2 065	413 000	9,8	49,0%	18,5%	31,1%
Grenoble	530 000	1987	36,4	36,4	89	45 680	3 903	1 053 680	11,7	58,9%	24,3%	53,1%
Le Havre	244 000	2012	13,0	7,8	22	na	1 111	228 931	na		12,5%	25,6%
Le Mans	208 000	2007	15,4	9,2	26	13 809	1 318	275 487	10,5	53,0%	17,4%	27,9%
Lille	1 100 000	1909	22,4	13,4	24	8 817	1 274	312 247	6,9	5,2%	3,0%	5,8%
Lyon	1 760 000	2000	72,1	43,3	103	72 542	4 967	1 023 287	14,6	16,5%	8,7%	13,1%
Marseille	1 530 000	2007	11,5	6,9	26	16 991	1 205	438 523	14,1	10,4%	4,4%	11,5%
Montpellier	384 000	2000	54,4	32,6	83	58 420	5 450	1 435 616	10,7	80,7%	43,0%	79,5%
Mulhouse	250 000	2006	19,0	11,4	39	13 619	1 186	273 973	11,5	54,7%	17,2%	31,6%
Nantes	585 000	1985	42,1	25,3	91	71 196	5 203	1 256 471	13,7	56,2%	19,9%	43,1%
Nice	350 000	2007	8,7	5,2	28	28 505	1 260	270 796	22,6	42,9%	6,7%	24,6%
Orléans	269 000	2000	29,2	17,5	43	19 996	2 418	457 538	8,3	66,6%	20,4%	35,2%
Reims	210 000	2011	11,2	6,7	18	14 364	1 027	210 446	14,0	40,0%	13,0%	22,3%
Rouen	530 000	1994	15,1	9,1	28	17 088	1 477	412 137	11,6	33,5%	10,6%	24,3%
St. Etienne	370 000	1981	18,9	11,3	35	21 109	1 703	343 950	12,4	49,1%	15,5%	34,3%
Strasbourg	450 000	1994	57,2	34,3	94	71 276	5 576	1 903 491	12,8	60,6%	32,0%	60,5%
Toulouse	1 100 000	2010	10,9	6,5	24	5 238	867	248 793	6,0	3,1%	2,3%	6,1%
Valenciennes	334 000	2006	18,3	11,0	21	5 984	1 169	247 758	5,1	35,2%	13,2%	29,3%
all			562,1	351,8	964	613 133	50 932	12 861 441	11,7	42,6%	15,1%	30,1%

Production and ridership (provinces, year 2013)

Streetcars' operation (total for 22 networks)

Total of commercial kilometers run : 50 932 000

Total of travels : 613 133 000

Total ok places X km : 12 861 441 000

Travel per km : average 11,7 (from 5,1 to 22,6)

Streetcars' part in PT system operation (average for all networks)

Total of commercial kilometers run : 15% (from 2,3 to 43%)

Total of travels : 43% (from 3,1 to 80,7%)

Places X km : 30% (from 5,8 to 60,5%)

Daily traffic on most busy lines : 130 000 (Montpellier) 120 500 (Nantes)

French LRT : focus on Paris region

Not a real streetcar network, but some lonely lines integrated in the PT network

=> connections with Metro, RER, Tram, BRT, Bus

Existing lines in 2011

Lines	Location	Length	Cars in operation
T1	Asnières - Bo	12	23
T2	Porte de Versailles- La Défense	14.6	21 (x2)
T3a	Bd des maréchaux Sud	7,9	17
T4	Aulnay – Bondy (Light rail System)	8	14



Paris region LRT : a big increase !

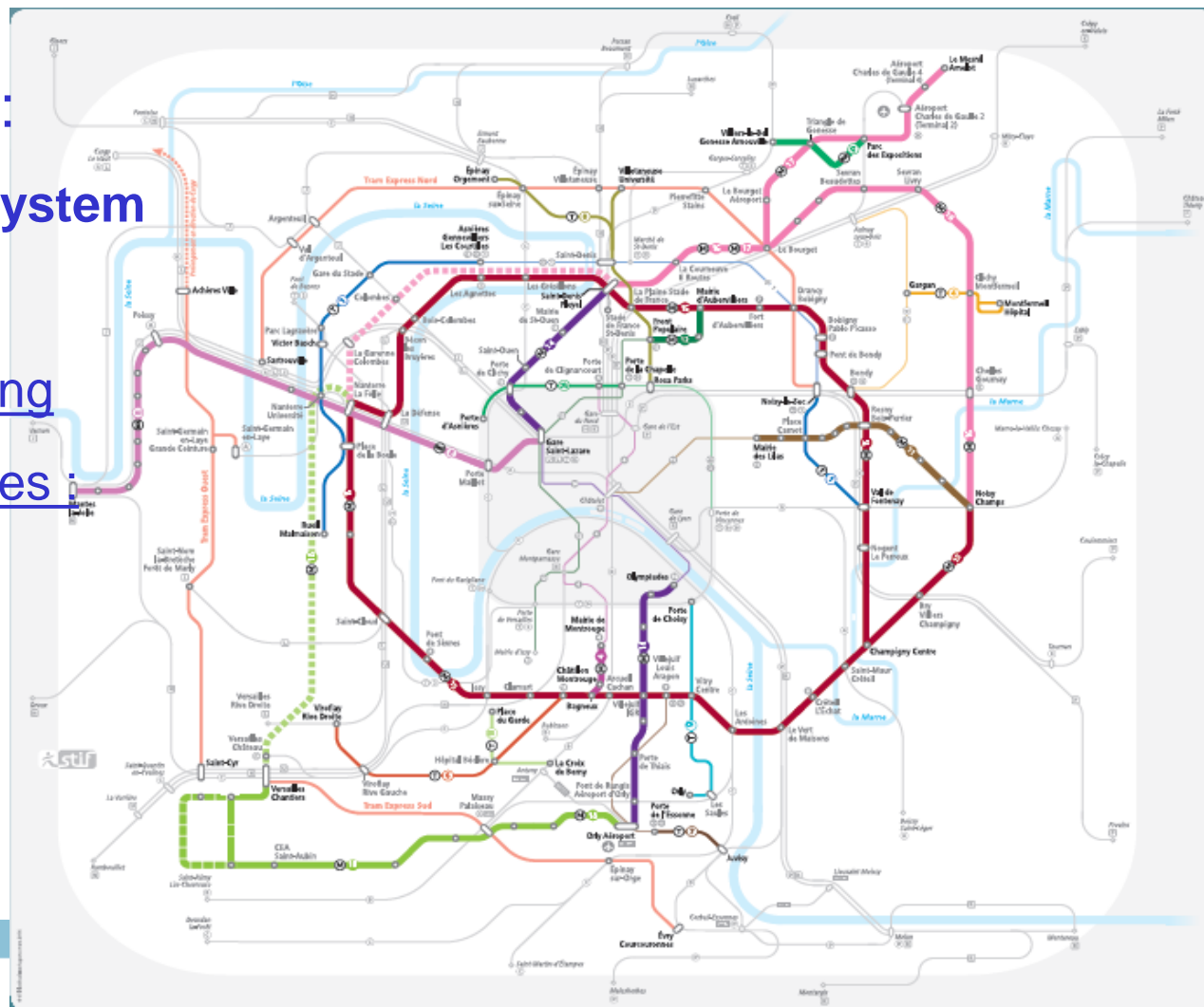
Existing lines at end of 2014 : **105 km (+ 63 km / 2011 !)**

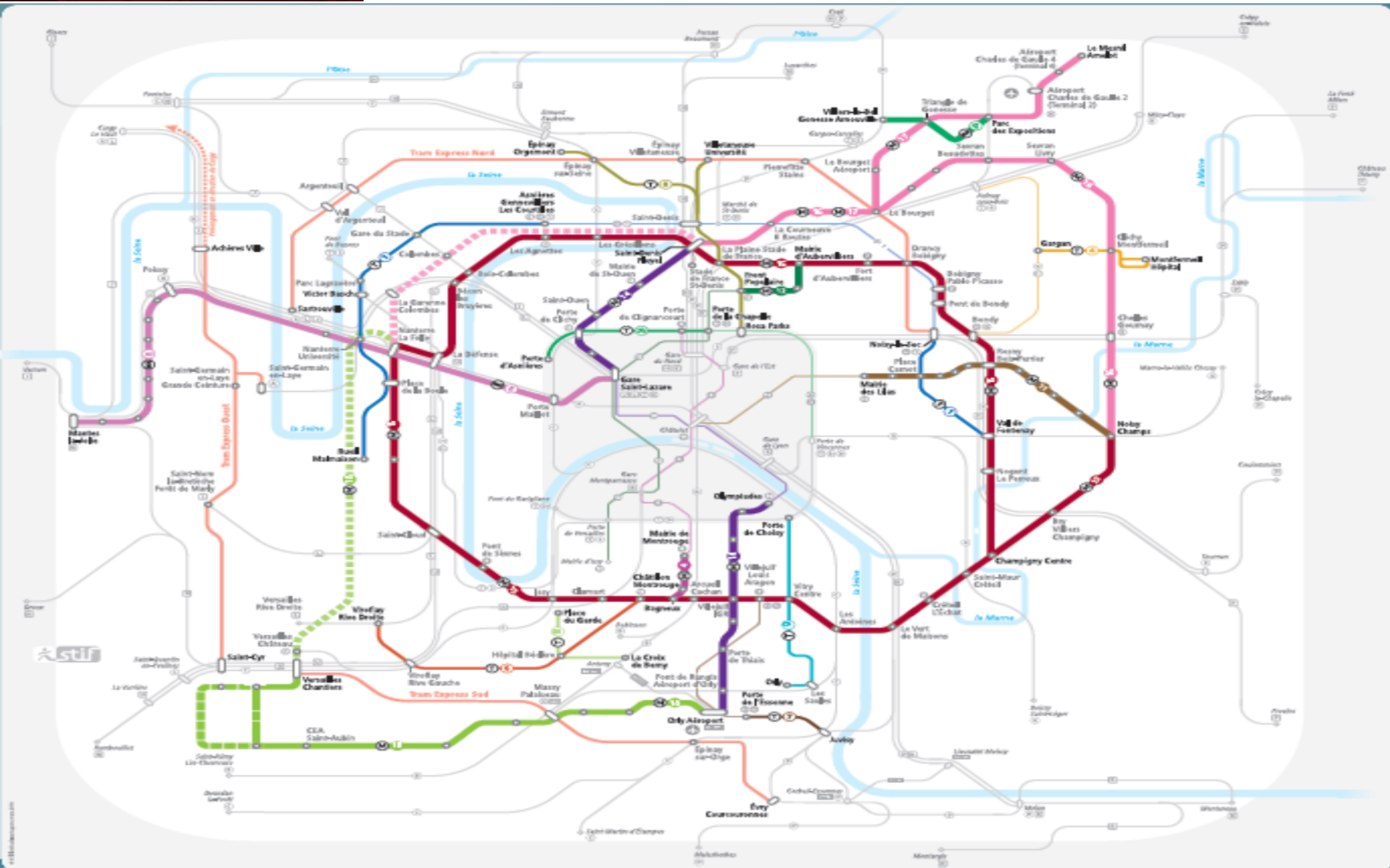
Lines	Location	Length (km)	Cars in operation	Start/ extension
T1	Asnières - Noisy le sec	17	36	Ext. Nov. 2012
T2	Bezons – Porte de Versailles	17,9	26 (x2)	Ext. Nov.2012
T3a	Bd des maréchaux Sud	12,4	25	Ext. Dec.2012
T3b	Bd des maréchaux Est	9,9	17	Open Dec 2012
T4	Aulnay – Bondy (Light rail System)	8	14	-
T5	St Denis - Garges Sarcelles	6.6	13 (on tires)	Open Jul. 2013
T7	Villejuif - Athis Mons	11	19	Open Nov. 2013
T6	Chatillon - Viroflay	14	28	Open Dec 2014
T8	Saint Denis - Villetaneuse	8.5	20	Open Dec. 2014

Paris region LRT : even more projects !

“Grand Paris” context :
a big automatic metro system
besides this one,
many projects regarding
all public transport modes

- Metro
- RER
- LRT
- BRT & busses





Paris region LRT : even more projects !

Regarding Light Rail :

- ⇒ tracks under works
- ⇒ some other projects in progress

Both for :

- *Streetcars lines*
 - *Light Rail systems*
- ("tram-train" ⇔ express streetcars)*



Paris region : LR & streetcars projects !

Line	Type	New / Extension	Length (km)	deadline	Expected ridership (per week day)
T1	Streetcar	Ext.	10.7	2017	50 000
T1 phase 2	Streetcar	Ext.	6,4	2018/2023	60 000
T3b	Streetcar	Ext.	4,3	2017	76 000
T4	Light Rail	Ext.	6,5	2017	37000
T7	Streetcar	Ext.	3,7	2018	48 000 (whole line)
T9	Streetcar	New	10	2020	70 000
T10	Streetcar	New	8,2	2020/21	n a
TE Nord	Light Rail	New	28	2017	29 800
TE Ouest	Light Rail	New	29	2018/2019	n a
TE Sud	Light Rail	New	20	2018	40 000
TE Sud	Light Rail	New	14,6	2020	30 000

Till 2020 :

+ 49,8 km
(Streetcars)

+ 91,6 km
(LR systems)

French LRT : key facts of recent developments

At the end of high growth in Provinces,
straight inside boom around Paris...

Provinces :

Uncertainty regarding projects, due to

- global economic context (lack of fundings)
- political changes at local level



For some big networks...
Some needs of fundings to maintain older systems (30 years):

- heavy renewal of older tracks
- big services for Rolling Stock for life's lengthening
- replacement of older cars

=> Less & less new lines and new networks,
rather extensions & modifications of existing lines

French LRT : key facts of recent developments

In main and older networks,

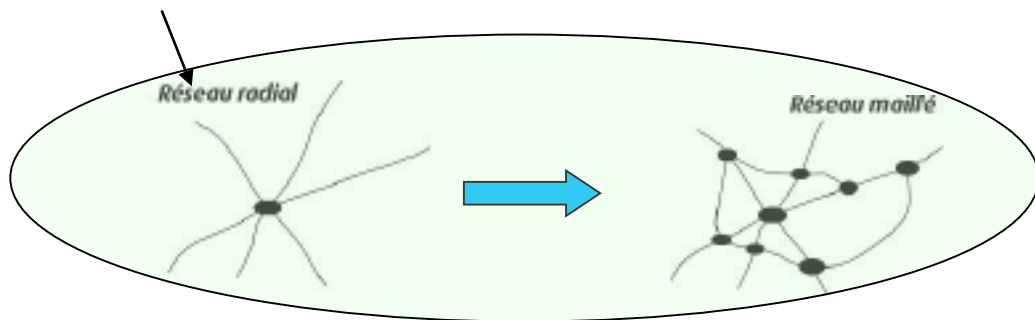
the need to adapt the supply to the demand !

Several solutions implemented

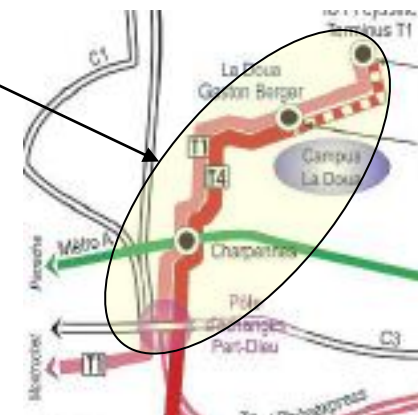
- increase of frequencies
- interconnection of lines

Rise of fleet

Several lines on same route



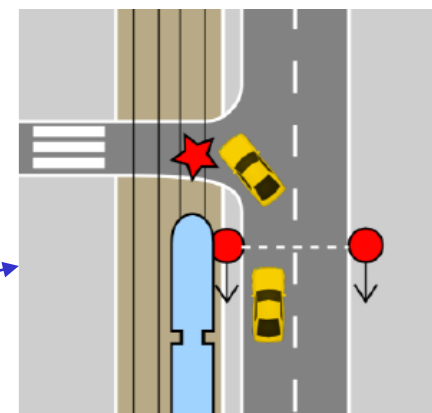
- rise of Rolling Stock capacity
 - 33 m to 40 m long cars

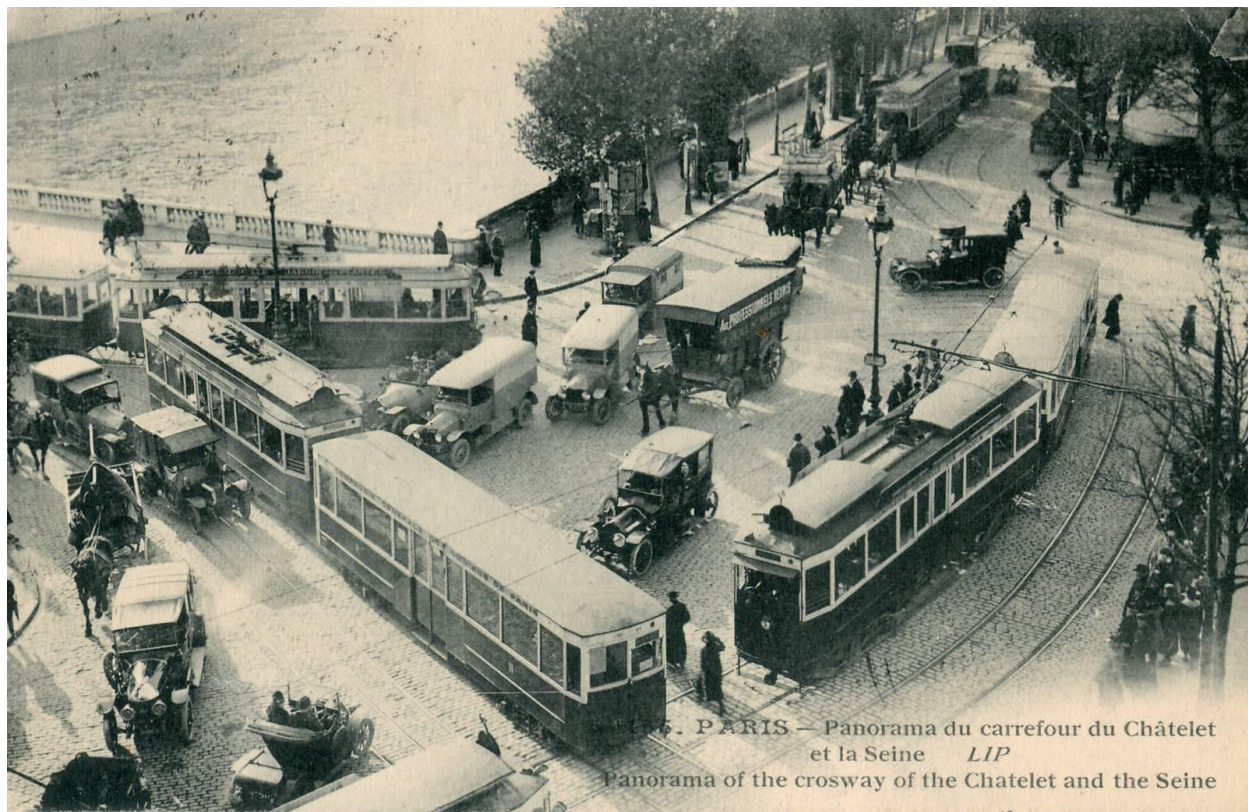


French LRT : key facts of recent developments

Safety issues

- 10 years of safety management “*STPG process*”
 - ✓ all networks 1st assessment achieved
 - ✓ beginning of actualisation process
 - ✓ a solid (substantial) feedback (*accidents database*)
- Mains stakes confirmed
 - ✓ roundabouts
 - ✓ “turn_on” junctions
 - ✓ pedestrians : severity of accidents, distraction





PARIS — Panorama du carrefour du Châtelet
et la Seine LIP
Panorama of the crosway of the Chatelet and the Seine

Thanks !...

D.BERTRAND

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