GLOBALWIM

A global solution of Weigh In Motion

Workshop Brazil 2015

Overload issues

Road safety | Unfair competition | Saving infrastructure

Heavy truck (>3,5t)
=
1,8% traffic
14% of deaths on road
(in France)

40t + 10% overload
=
+24 000€ annual gain
(in France)

1x 40t = 900 000 x

+15%
1x = 2 x

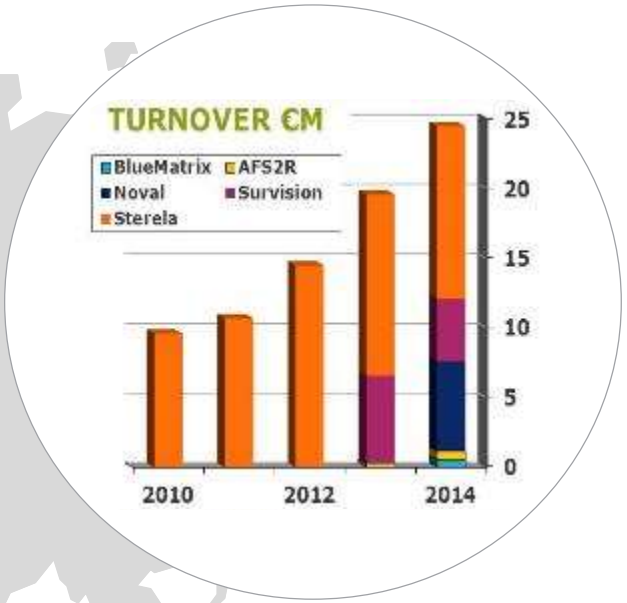
Road administrator requirements

- Automatic control
- Pre-selection and manual control
- Statistics

A company driven by passion

More than
155
employees

3.3 €M
in R & D
(57 people)



Our ambition

Provide innovative solutions

20 years of experience in WIM

15%

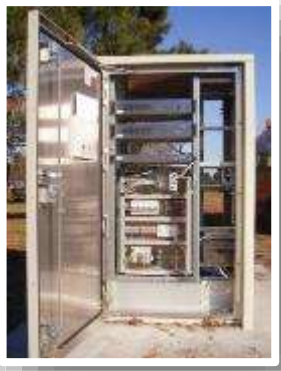
1994
SIREDO

10%

2004
MAJ5

10%, Camera, Enforcement

2007
MDM



7%, Twin wheels

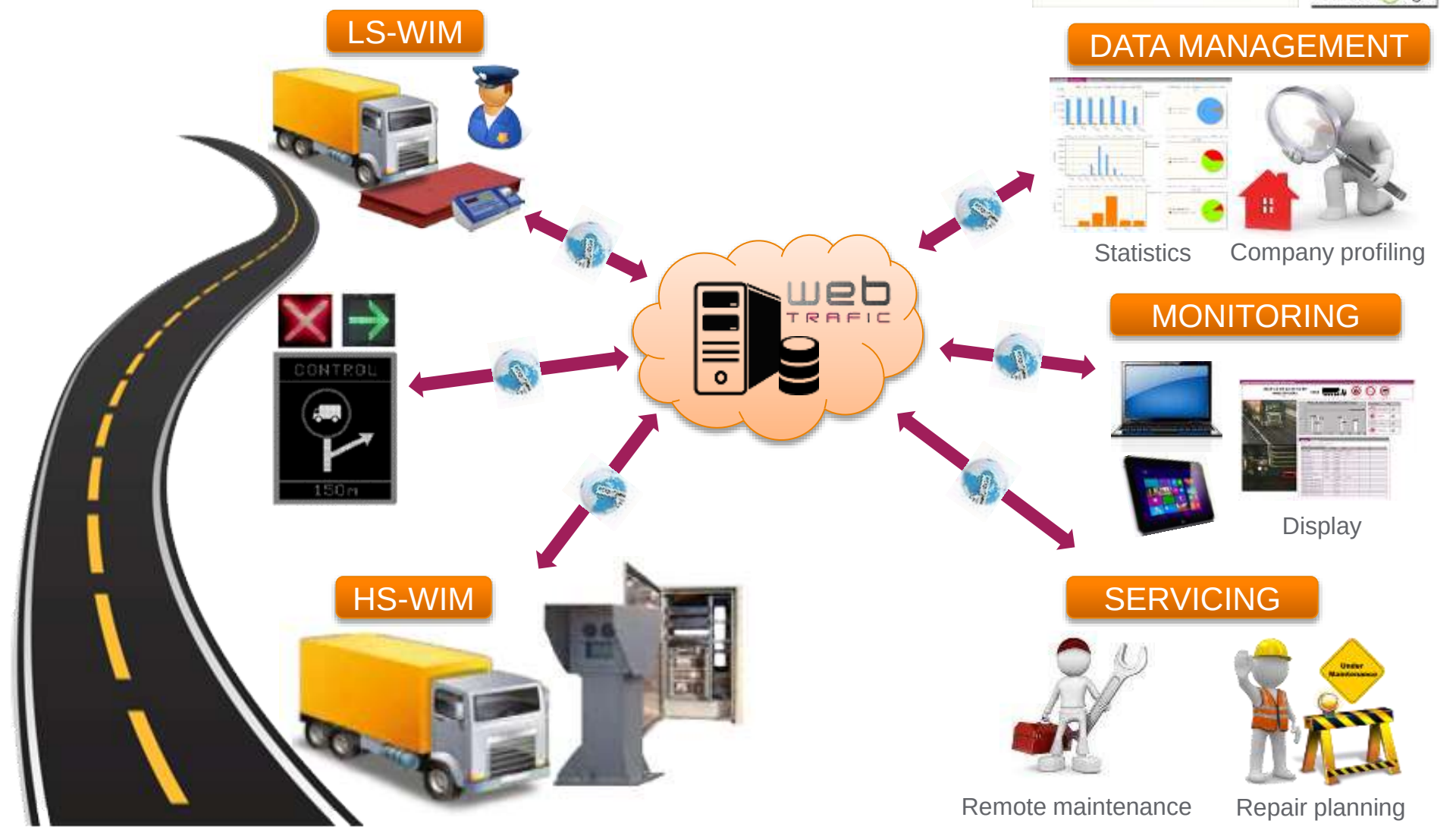
2012
WIMIX

5%, Validation criteria, Tools

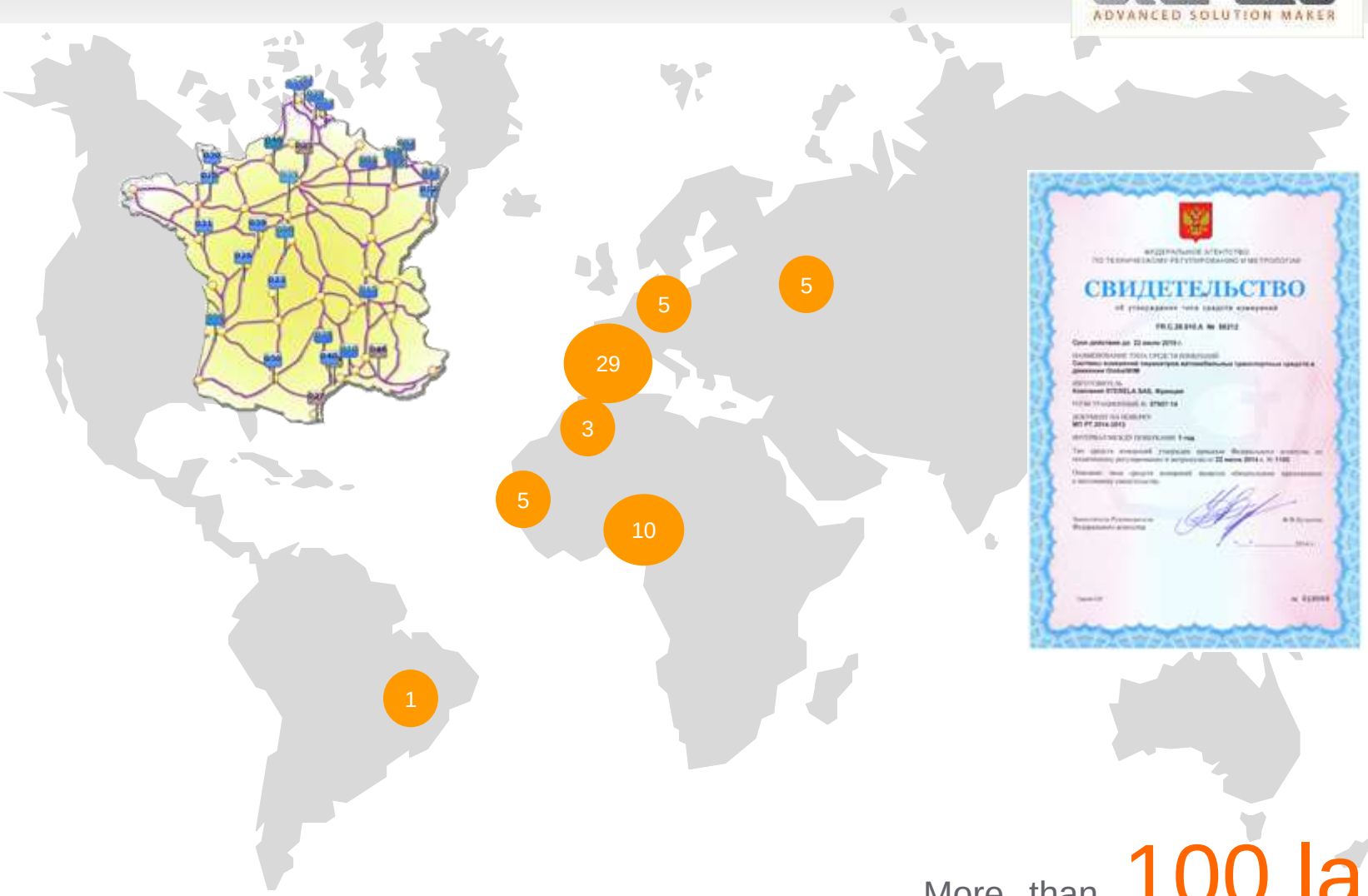
2014
GLOBALWIM

GLOBALWIM measurement capability

GLOBALWIM architecture



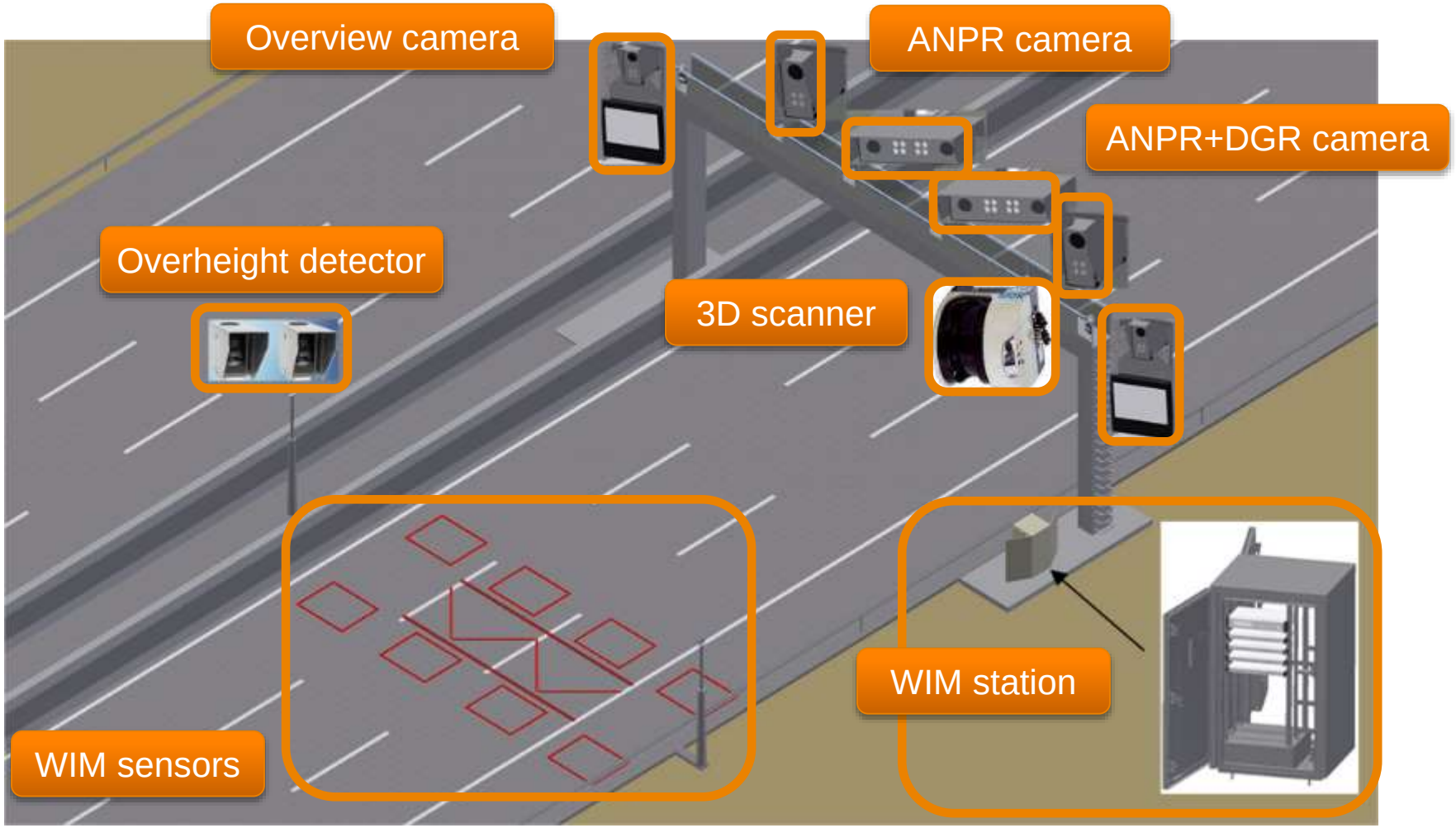
GLOBALWIM sites all over the world



СВИДЕТЕЛЬСТВО

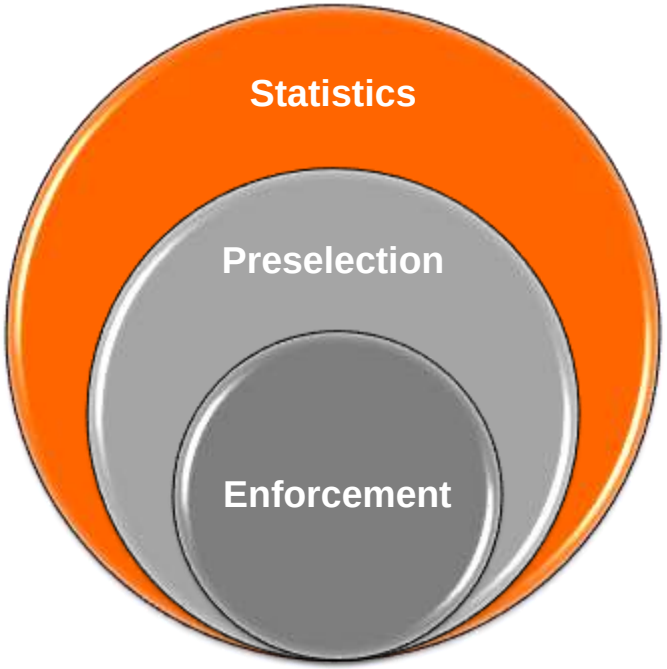
More than 100 lanes

Typical High Speed WIM layout



WIM sensors layout for Statistics

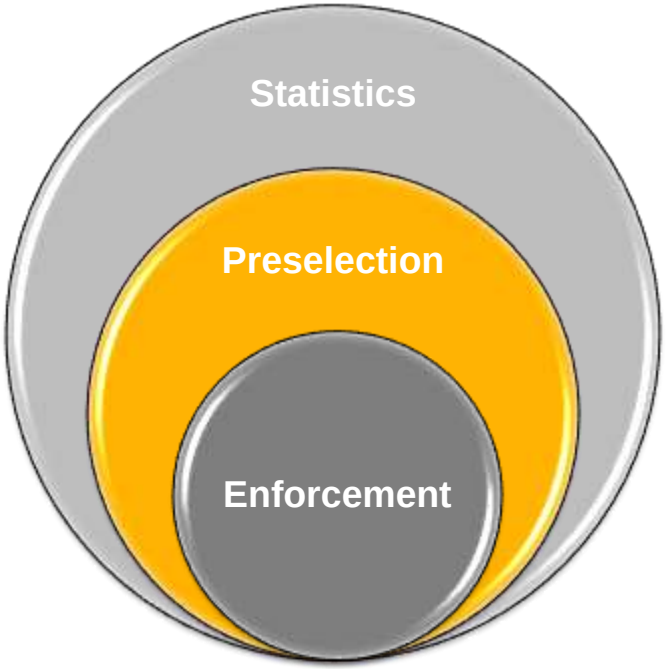
Piezo Polymer



2 x PP Class I (speed)
+ 2 x PP Class II (position)

WIM sensors layout for Preselection

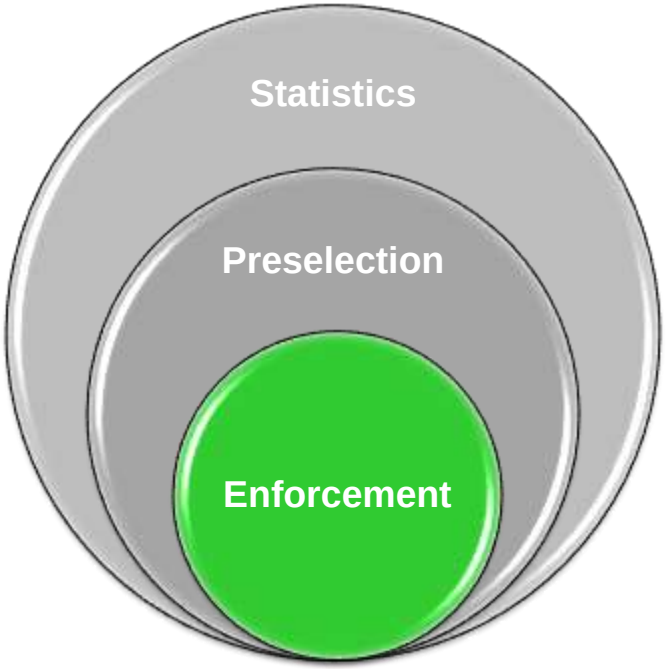
Piezo Quartz



2 x PQ (weight)
+ 1 x PP Class II (speed)
+ 2 x PP Class II (position)

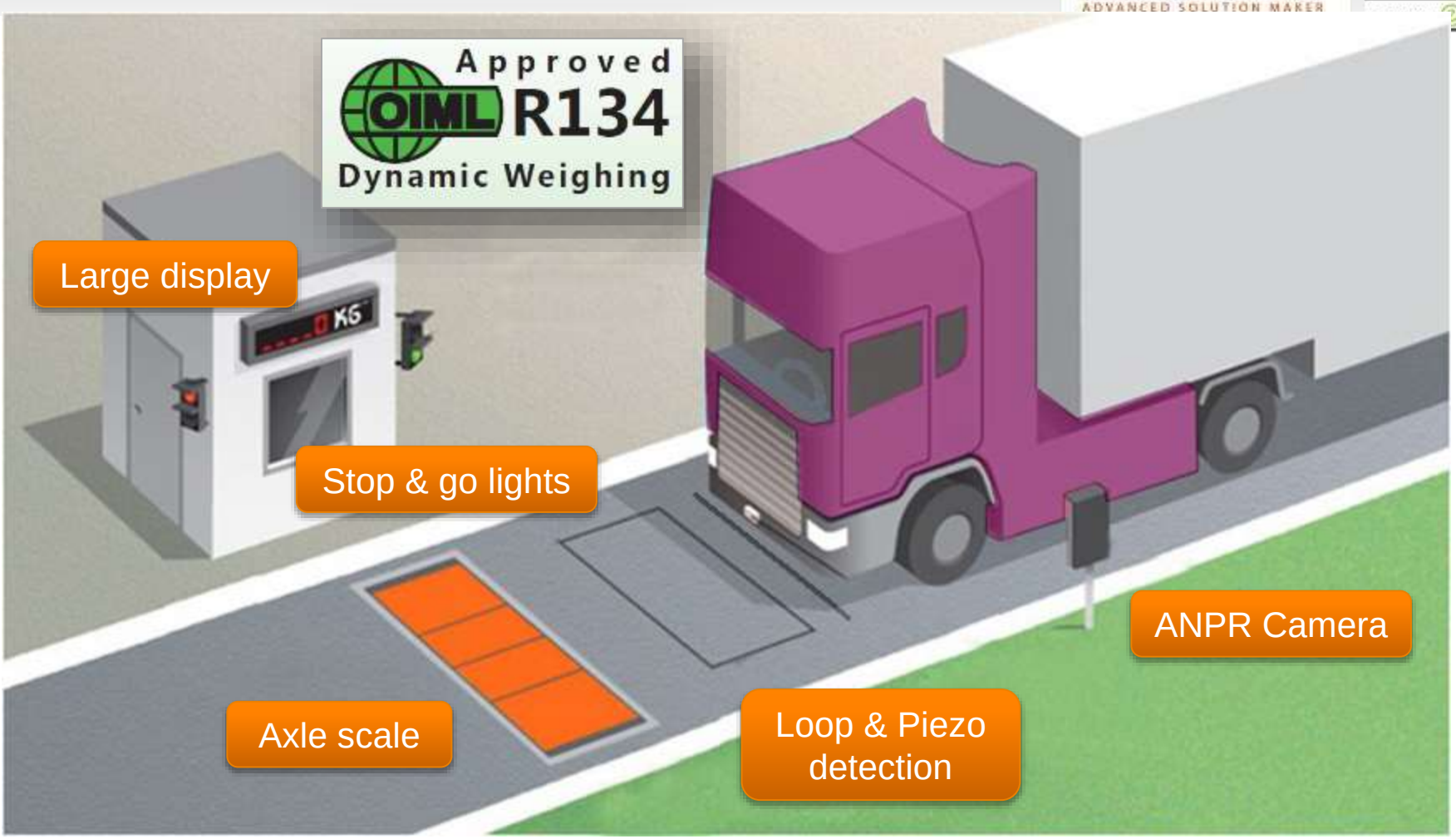
WIM sensors layout for Enforcement

Piezo Quartz

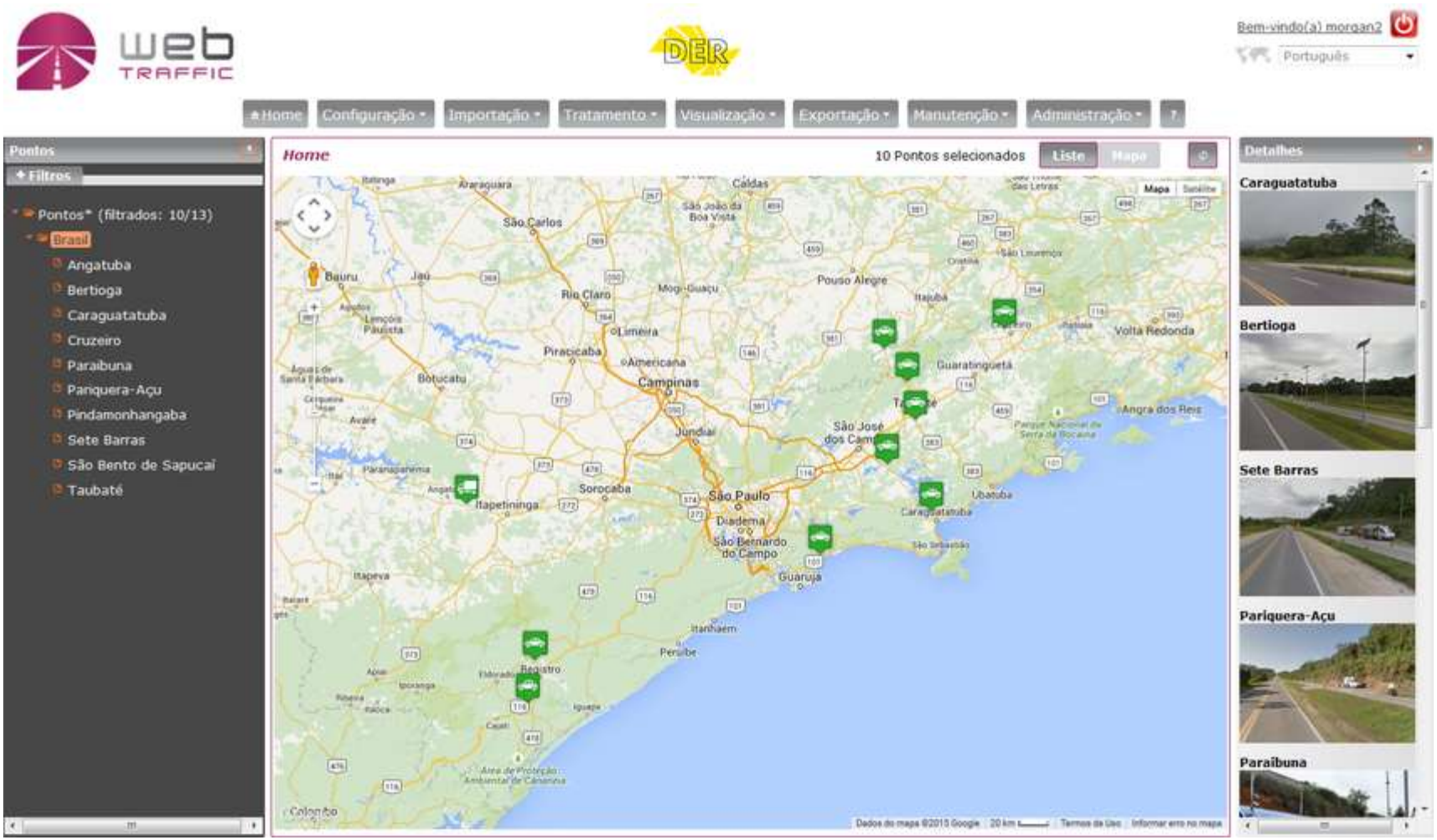


4 x PQ (weight, speed)
+ 2 x PP Class II (position)

Typical Low Speed WIM layout



WEBTRAFFIC : Home



WEBTRAFFIC : Visualization

2015-06-17 11:31:43.228	MTX6513	47			BR		29,0 %	Voie 1	T3S3		51,766 t	61,8 km/h	17,79 m
2015-06-17 11:30:56.358	JAZ0460	99			BR		25,0 %	Voie 1			54,877 t	73,1 km/h	17,21 m
2015-06-17 11:30:40.319	CRV6005	99			BR			Voie 1	V2		1,739 t	90,4 km/h	3,74 m
2015-06-17 11:30:03.925	MLL7748	92			BR		8,0 %	Voie 1	V2		1,853 t	97,9 km/h	3,48 m
2015-06-17 11:29:54.255	MIJ3273	81			BR			Voie 1	V2		1,435 t	85,8 km/h	3,72 m

(1 of 20) 1 2 3 4 5 6 7 8 9 10 5

Le nombre de résultats a été limité à 100

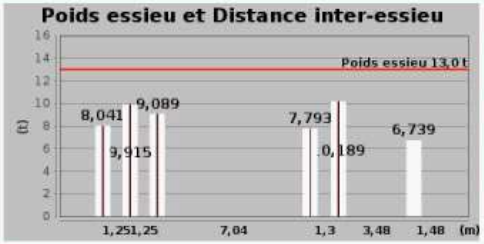
SWIMG: Détails du véhicule

2015-06-17 11:31:43.228
MTX6513 (BR)
Voie 1

T3S3

29,4 %

7,8 %



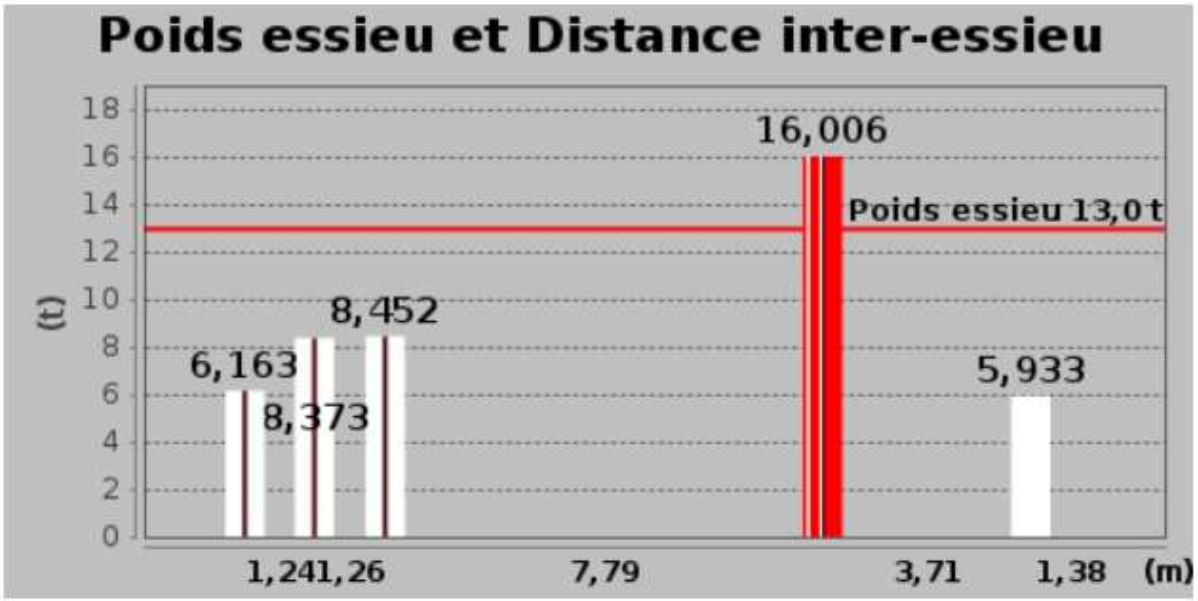
	Mesure	Validité
	61,8 km/h	
	51,766 t	
	2,09 m	
	17,79 m	

Mesures | Infractions

Catégorie DGITM: 5, Sterela: T3S3 (36)
Chevauchement: bien positionné

	Limite	Mesure	Mesure/Limite	Contrôle	Mesure/Contrôle
Vitesse	80,0 km/h	61,8 km/h			
Poids total	40,0 t	51,766 t	29,4 %		
Poids essieu 1	13,0 t	6,739 t			
Poids essieu 2	13,0 t	10,189 t			
Poids essieu 3	13,0 t	7,793 t			
Poids essieu 4	13,0 t	9,089 t			
Poids essieu 5	13,0 t	9,915 t			
Poids essieu 6	13,0 t	8,041 t			
Ecart latéral		-0,11 m			

WEBTRAFFIC : Visualization



	Mesure	Validité
	85,5 km/h	
	44,927 t	
	2,07 m	
	17,18 m	

Araranguá : Overview

Installation : Pole, base, tube, manhole

Installation : WIM Station

Installation : Sensors, Camera

Tests carried out by

LabTrans

sterela ADVANCED SOLUTION MAKER

LENC uma empresa egis

DNIT

Estudos e pesquisas para suporte à gestão de competências da CGPERT

Araranguá-SC WIM Test Site

LabTrans

Test schedule : 2014, December 17th and 18th

➔ 2 different trucks, 60 runs

Test schedule : 2015, February 25th and 26th

➔ 2 different trucks, 60 runs

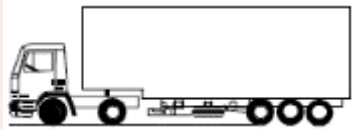
Tests carried out by

LabTrans

sterela ADVANCED SOLUTION MAKER

LENC uma empresa egis

Test schedule : 2014, December 17th and 18th

Session	Vehicle	Speed	Number of Runs
1	3-axle rigid truck (3C) 	70	18
2		60	6
3		80	6
1	5-axle tractor semi-trailer combination (2S3) 	70	18
2		60	6
3		80	6

Reference	Gross Weight
Vehicle 3C	20 700
Vehicle 3S3	39 162

Tests carried out by

LabTrans

sterela ADVANCED SOLUTION MAKER

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Test schedule : 2014, December 17th and 18th

Type of measurement	Average error	Standard Deviation	Number of runs
Gross Weight Vehicle	1.0%	1.3%	60

Methodology (confidence level 95%)	Gross Weight Vehicle
ASTM 1318	Class III
COST 323	A(5)

Tests carried out by

LabTrans

sterela ADVANCED SOLUTION MAKER

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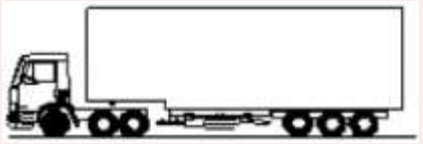
Test schedule : 2015, February 25th and 26th

Session	Vehicle	Speed	Number of Runs
1	3-axle rigid truck (3C)	70	18
2		60	6
3		80	6
1	6-axle tractor semi-trailer combination (3S3)	70	18
2		60	6
3		80	6

Reference	Gross Weight	Axle 1	Axles 2-3	Axles 4-5-6
Vehicle 3C	20 595	4 236	16 358	na
Vehicle 3S3	44 214	5 227	13 448	25 539

Tests carried out by

LabTrans

sterela ADVANCED SOLUTION MAKER

LENC uma empresa egis

Test schedule : 2015, February 25th and 26th

Type of measurement	Average error	Standard Deviation	Number of runs
Gross Weight Vehicle	2.07%	0.94%	60
Single axle	-1.27%	2.24%	60
Group of axles	3.13%	2.53%	90

Methodology (confidence level 95%)	Gross Weight Vehicle	Single axle	Group of axles
ASTM 1318	Class III	Class III	Class III
COST 323	A(5)	A(5)	B(7)

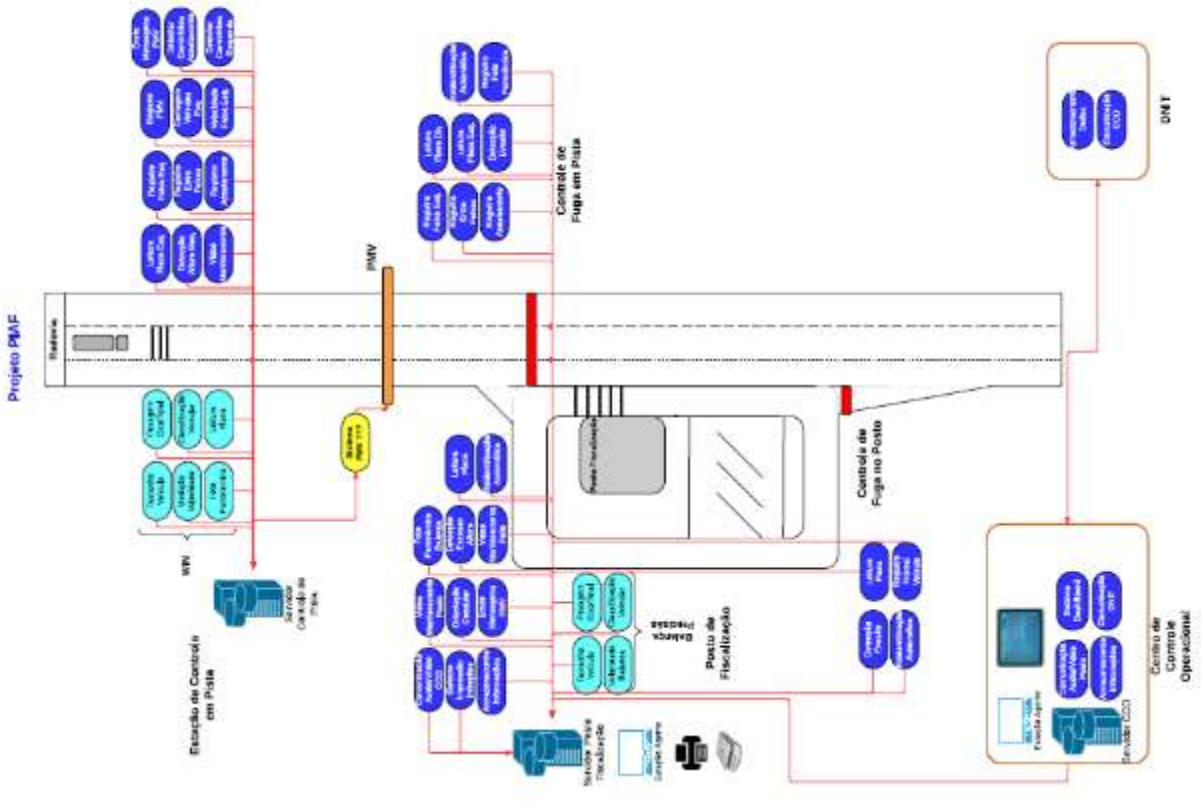
Gross Weight Vehicle	Maximum error	Average error	Standard Deviation
All measures	3.72%	2.07%	0.94%
Validated measures	2.63%	1.71%	0.66%

Conclusion

PIAF requirements	GLOBALWIM compliance
High speed Weigh In Motion	✔ (90 km/h)
Accuracy B(10) according to COST323	✔ A(5)
Over height detection	✔
Twin wheels detection	✔
Classification according to PNCT	Available Q3/2015
ANPR	✔
Overall picture of vehicles	✔
Data collection for statistics	✔

Ready to use in Brazil

Perspectives



Araranguá = PIAF Proof of concept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ADVANCED SOLUTION MAKER
LENC
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Thank you for your attention