

MS Metering Devices and Solutions



ERESS Customer Forum 2011 “Energy Efficiency – Smart Metering & Billing”
June 16th, 2011 Bruxelles

Dott. Ing. Andrea Zironi

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MS Solution Offer
Installations
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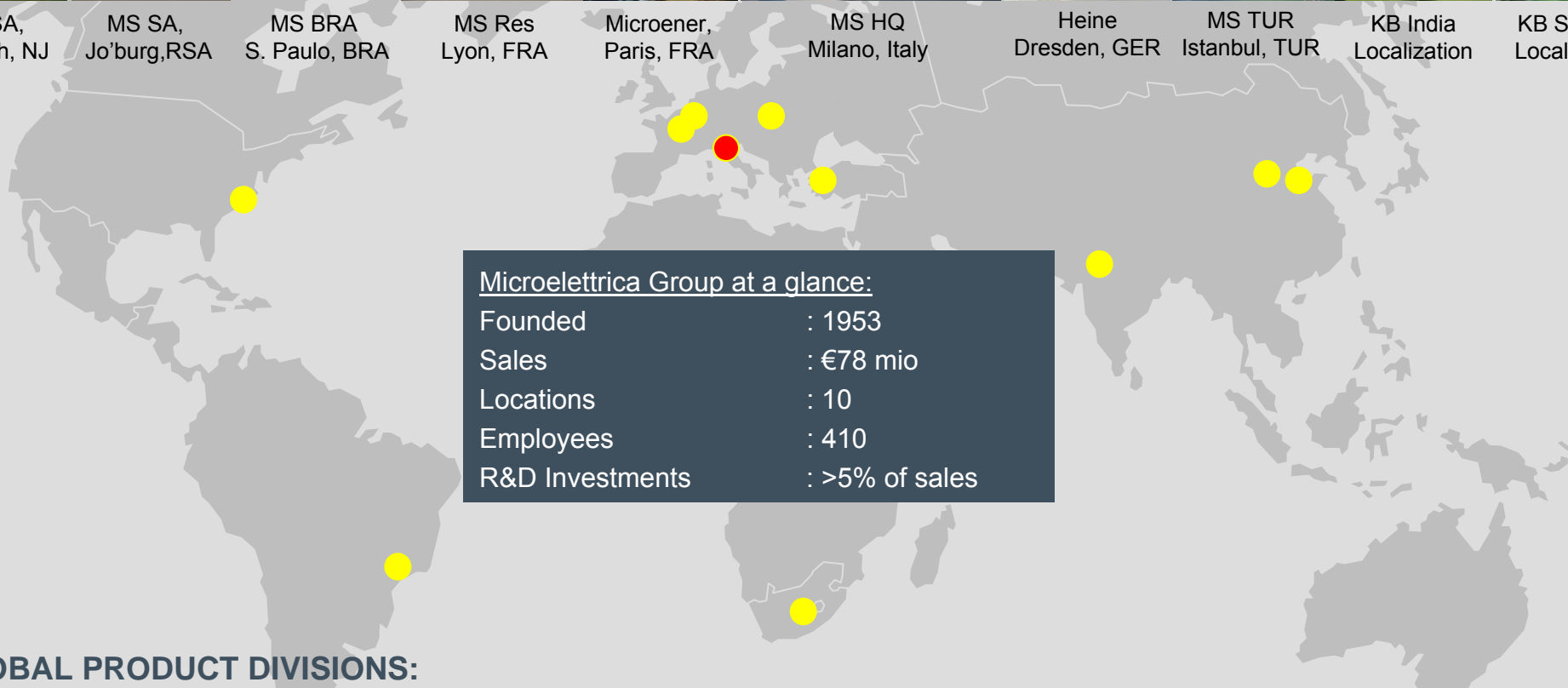


MICROELETTRICA: 60 YEARS OF EVOLUTION IN ELECTROMECHANICAL AND ELECTRONIC COMPONENTS



2011

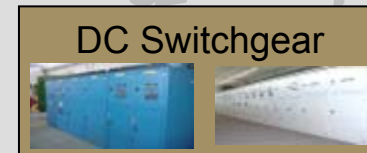
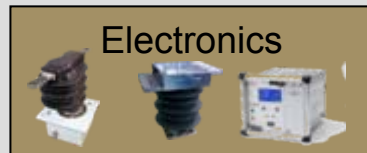
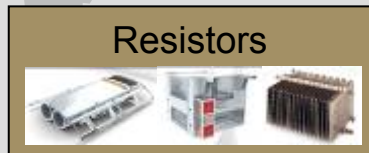
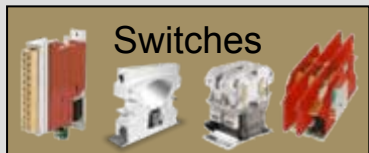
MS USA, Randolph, NJ MS SA, Jo'burg, RSA MS BRA, S. Paulo, BRA MS Res, Lyon, FRA Microener, Paris, FRA MS HQ, Milano, Italy Heine, Dresden, GER MS TUR, Istanbul, TUR KB India Localization KB Suzhou Localization



Microelettrica Group at a glance:

Founded	: 1953
Sales	: €78 mio
Locations	: 10
Employees	: 410
R&D Investments	: >5% of sales

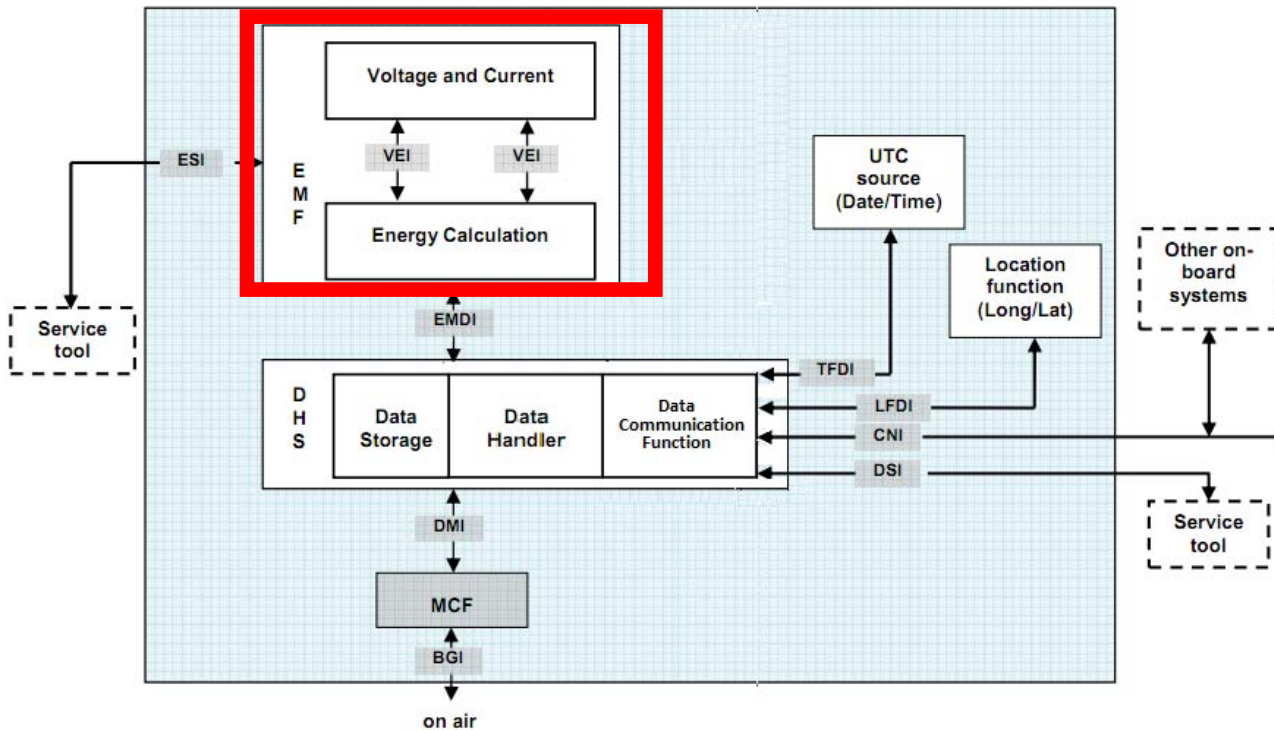
5 GLOBAL PRODUCT DIVISIONS:



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Microelettrica's Offer – EN50463:2012

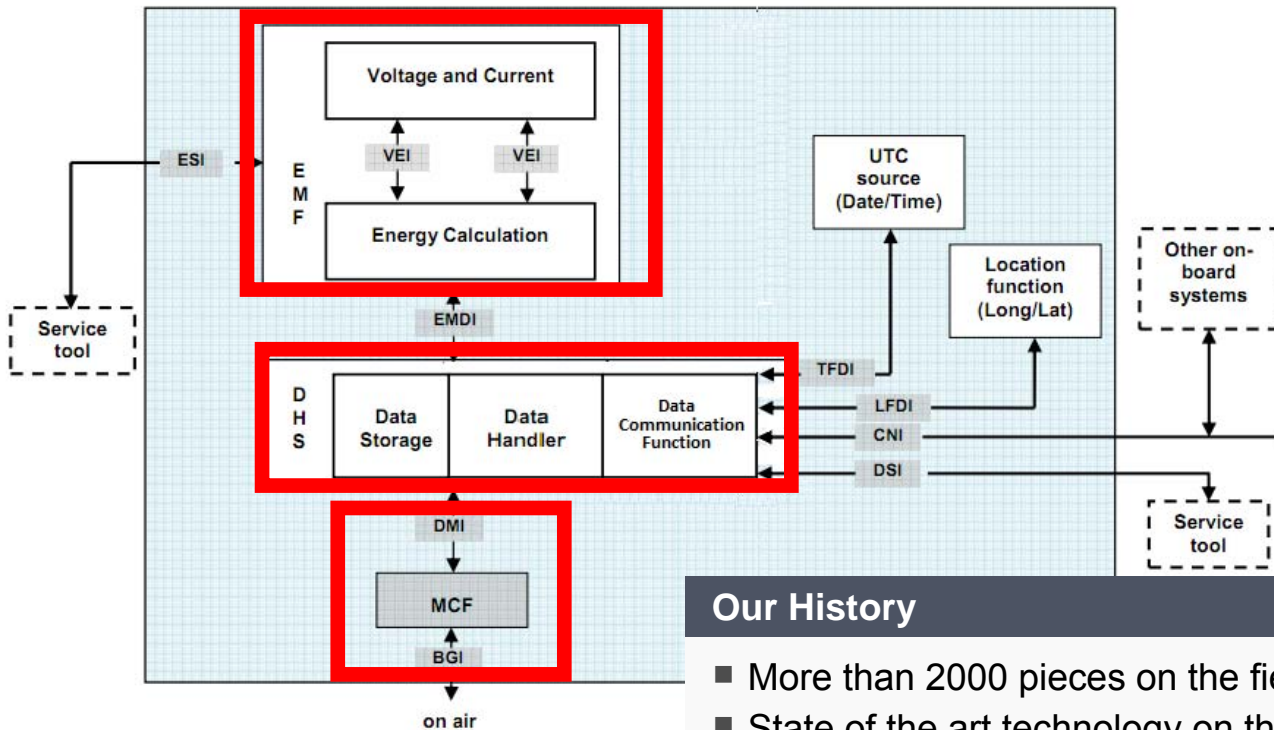


EMF : Energy Measuring Function

- AC/DC current / voltage sensors
- Up to 0.2% accuracy in AC / DC



Microelettrica's Offer – EN50463:2012



DHS / DCS : Data Handling/Collecting System

- Box or rack installation
- Own (MS) or partner make
- Multiple data systems

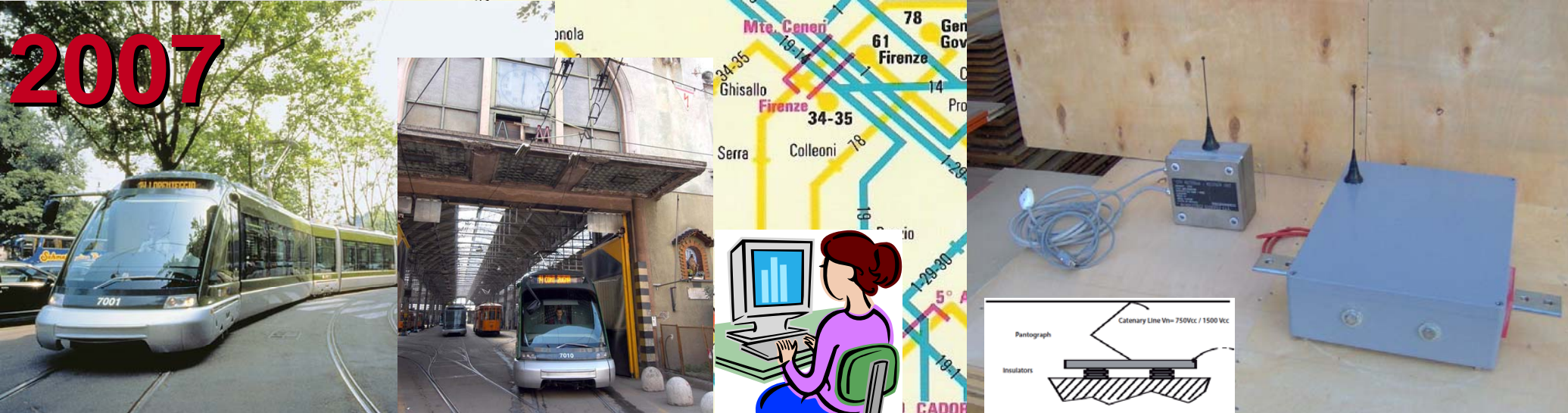


Our History

- More than 2000 pieces on the field for more than 15 years
- State of the art technology on the last developed trainsets (OE and AM)
- Active in the standardization processes



City Metering



Main Characteristics

- Two units electric parameters measuring system for urban rail transportation.
- SW assisted data management and data recording system for monitoring and optimization.
- Easy installation on existing Tramway or Metro.
- Ease for energy billing or System Administrator's data monitoring.

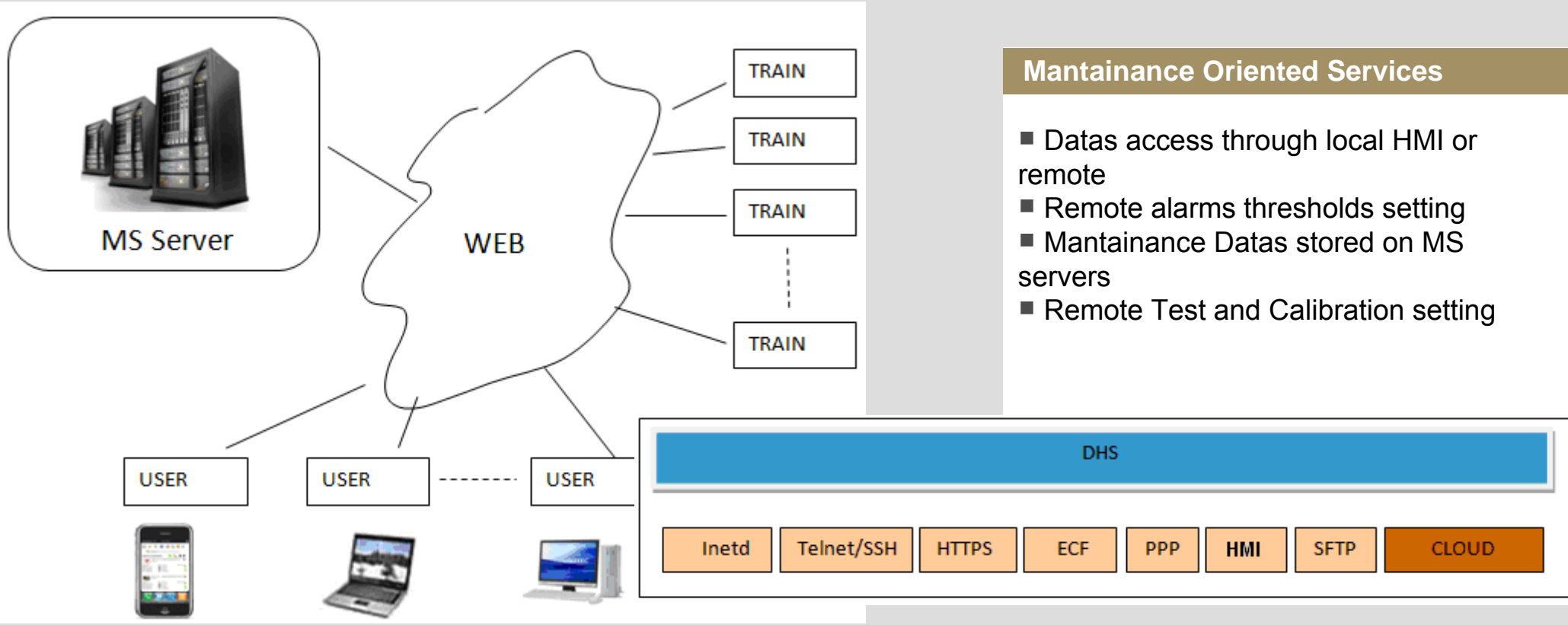
MS Know How

- Typical accuracy of electric parameters measure: 0.5% at 23°C.
- Weight: less than 8kg
- Wireless data transmission (434MHz).
- MS Patent

Microelettrica's Offer – EN50463:2012

Maintenance Oriented Services

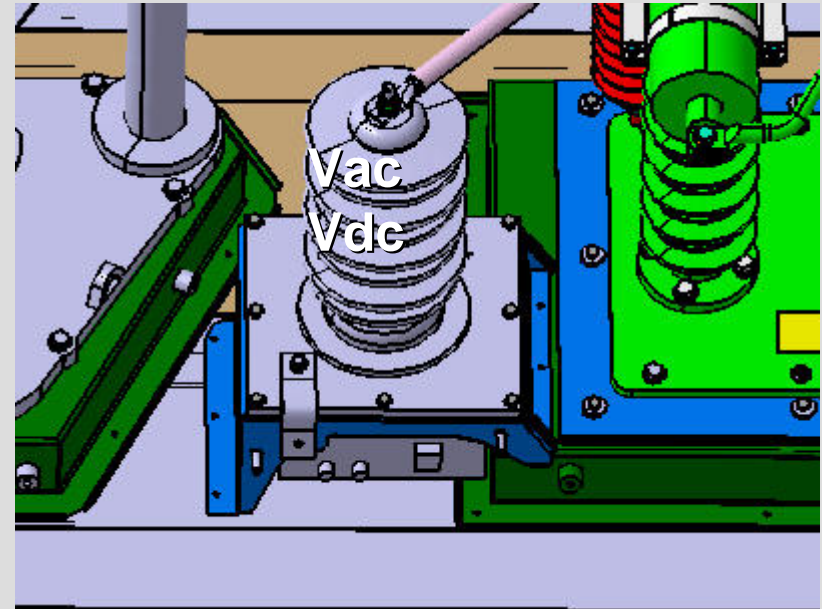
- Datas access through local HMI or remote
- Remote alarms thresholds setting
- Maintenance Datas stored on MS servers
- Remote Test and Calibration setting



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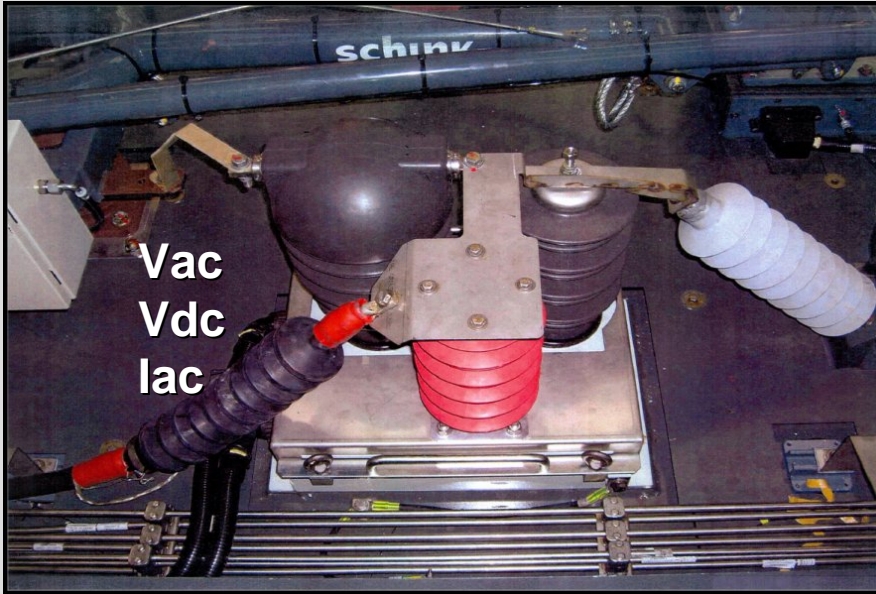
Installations



1994

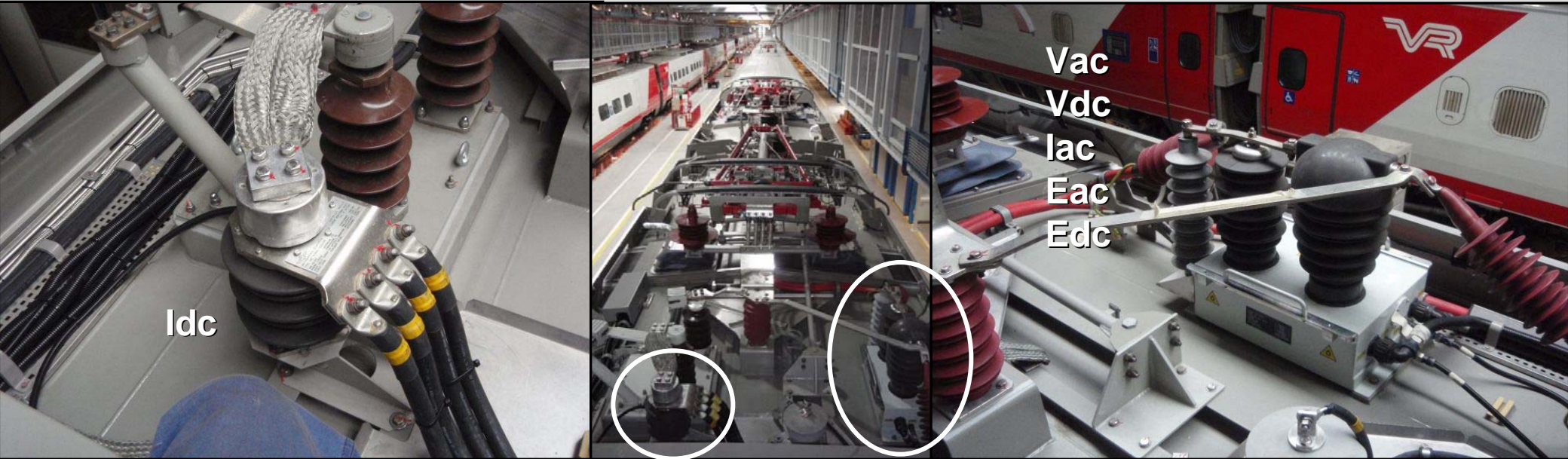
2009

Installations



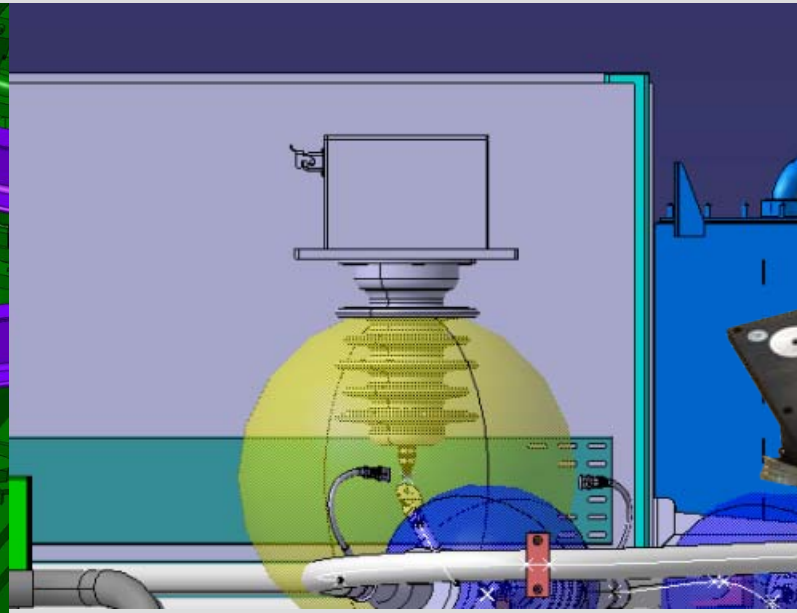
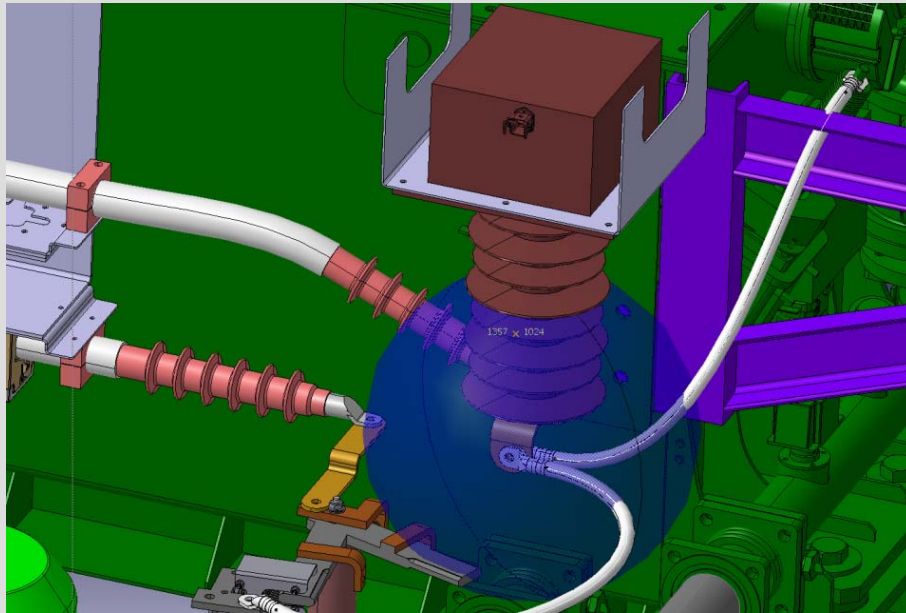
2005-2007

Installations



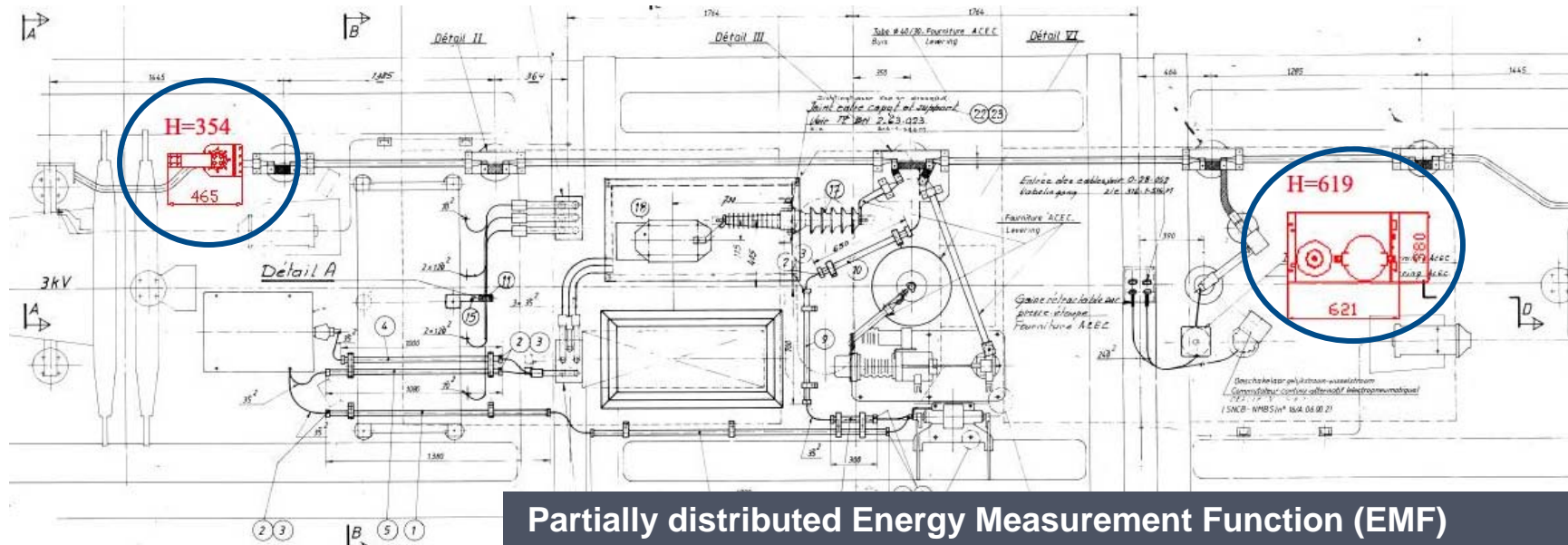
2008

Installations



2011

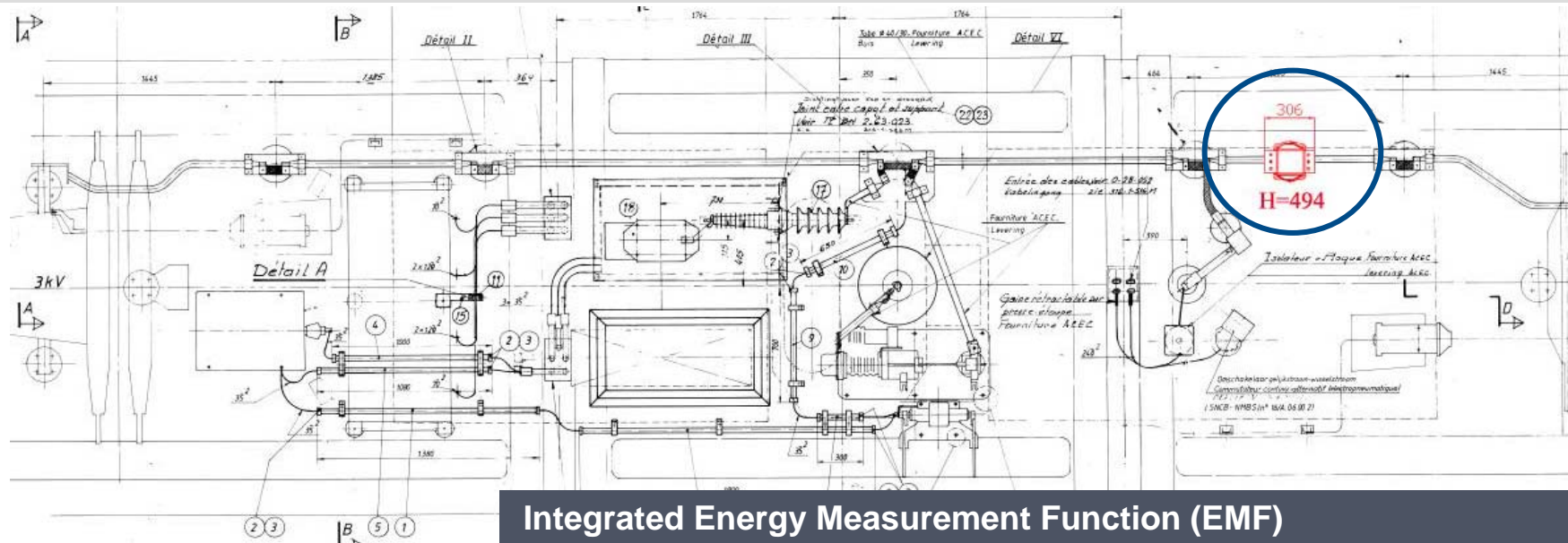
Installations



Partially distributed Energy Measurement Function (EMF)

- AC Current / AC-DC Voltage / AC-DC Energy sensor
- Separated DC Current sensor

Installations



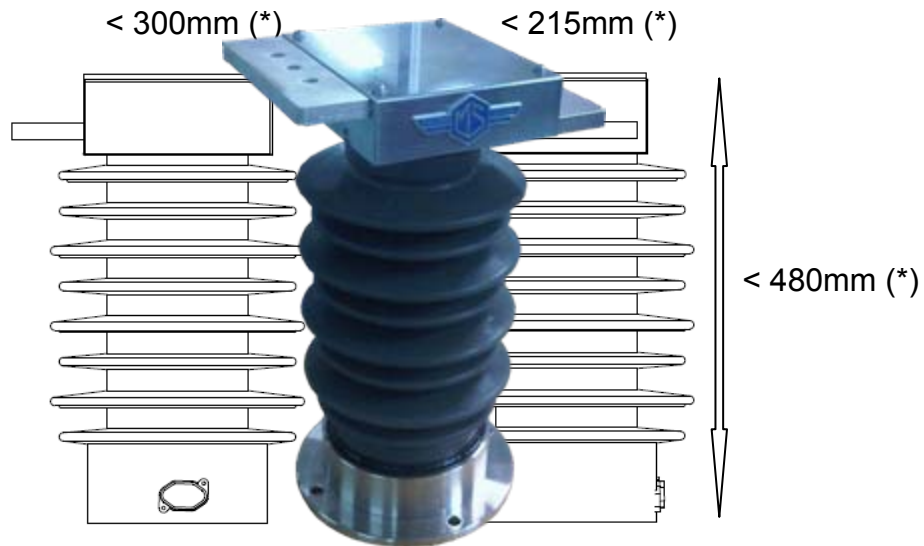
Integrated Energy Measurement Function (EMF)

- AC/DC Current / AC-DC Voltage / AC-DC Energy sensor

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Ecometer



Main Functions

- AC Voltage Measuring
- DC Voltage Measuring
- AC Current Measuring
- DC Current Measuring
- Energy Measuring

(*) Biggest Shunt 4000A nominal / 8000A peak

Ecometer

Tested Device: **Ecometer DC (*)**

Full Scale Value: **2500 A**

Power Supply: **24V**

T	Set Values		Meas. Values			
	% of F.S.	Line Current	Measured Line Current	Output (RS422)	ϵ / FS	ϵ / point
	%	A dc	A dc	A dc		
25°C	16,0%	400,0	395,6	395,4	0,0%	0,1%
	32,0%	800,0	817,4	814,7	0,1%	0,3%
	48,0%	1200,0	1209,0	1205,3	0,1%	0,3%
	64,0%	1600,0	1555,6	1550,1	0,2%	0,4%
	80,0%	2000,0	1925,1	1921,1	0,2%	0,2%

Main Characteristics

- Compact dimensions
(less than 30kg / max. 480mm high)
- Quick installation
- Maintenance free
- High accuracy (0.2% average)
- Modular concept -> lower costs
- Output flexibility (Optic fibres, current loop, frequency)
- Idc nominal max: 4000 A



(*) Excerpt from TR AY00000043083 – 956mp – rev.C dated 10.01.2009

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MS references – HV Metering Products (excerpt)

Eurometer / Eletrafo

TEI9101010 Etr480, Pendolino CEKIA	2002
TEI9101017 Bombardier AGC	2002
TEI9101020 Ansaldo ETR500	2002
TEI9101021 Alstom ATPRD	2003
TEI9101029 Bombardier TALGO	2005
TEI9101042 Lekov EJ671	2008
TEI9101046 Alstom TT-NG	2008
TEI9101049 Alstom AGV	2008-2009
TEI9101053 Bombardier Regio 2N	2011
TEI9101054 Bombardier Twindexx	2011

Integrameter

TEI9101028 Alstom New Pendolino	2005
TEI9101030 Alstom AVR Ancho	2006
TEI9101037 Alstom EMU China	2007
TEI9101043 Alstom Helsinki St.Petersburgh	2009
TEI9101030NS CRC China	2010
TEI91010XX CAF AVE 320	2010

Switchmeter

TEI91010XX ABB	2010-2011
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Questions?



Microelettrica Scientifica Spa
Mr. Ing. Andrea Zironi
Via Alberelle, 56/58
Rozzano (MI) Italy

Phone: +39 02 57573 280
Fax: +39 02 57510 940
Email: andrea.zironi@microelettrica.com
Website: www.microelettrica.com