

Intelligent remote reading of gas meters

Why remote reading?

- Reducing the cost of travel and staff for reading of counters
- Reducing reading and billing time
- Preventing errors of reading and transcription of the recorded values of the counters



The problems of remote reading of gas meters

- Counters are not provided with electrical outputs
- Devices powered by an electrical outlet may present a safety risk factor
- A new solution using new types of counters
- The intervention in infrastructure can be dangerous and disturbs gas supply to consumers



Our solution

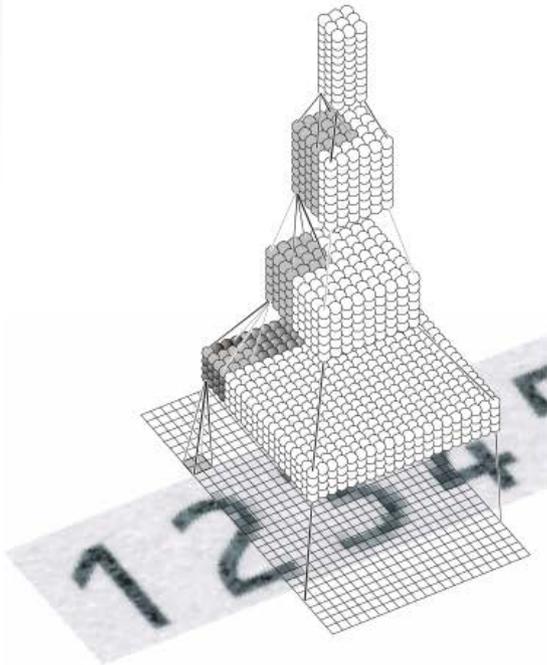
- Optical reading device with text recognition
- Local recognition of characters
- Index visibility is not obscured
- Easy install in 5 minutes without modifying the infrastructure





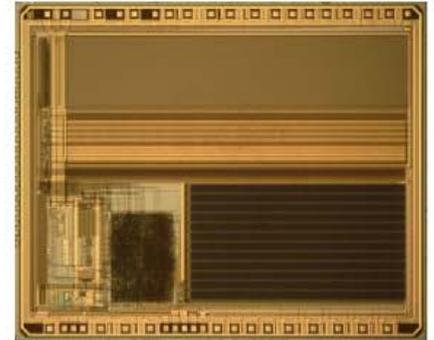
Reading Technology (OCR)

Neural Network Classifier



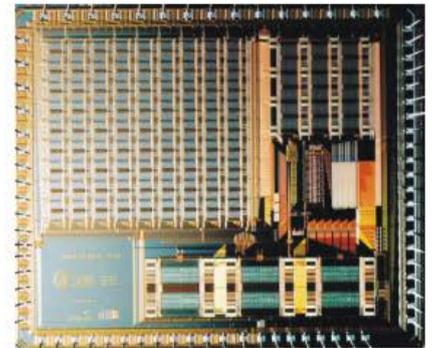
RETINA

- Auto-exposure
- Local edge detection
- 1000 images per second: equivalent to 2000 MIPS of digital signal processing

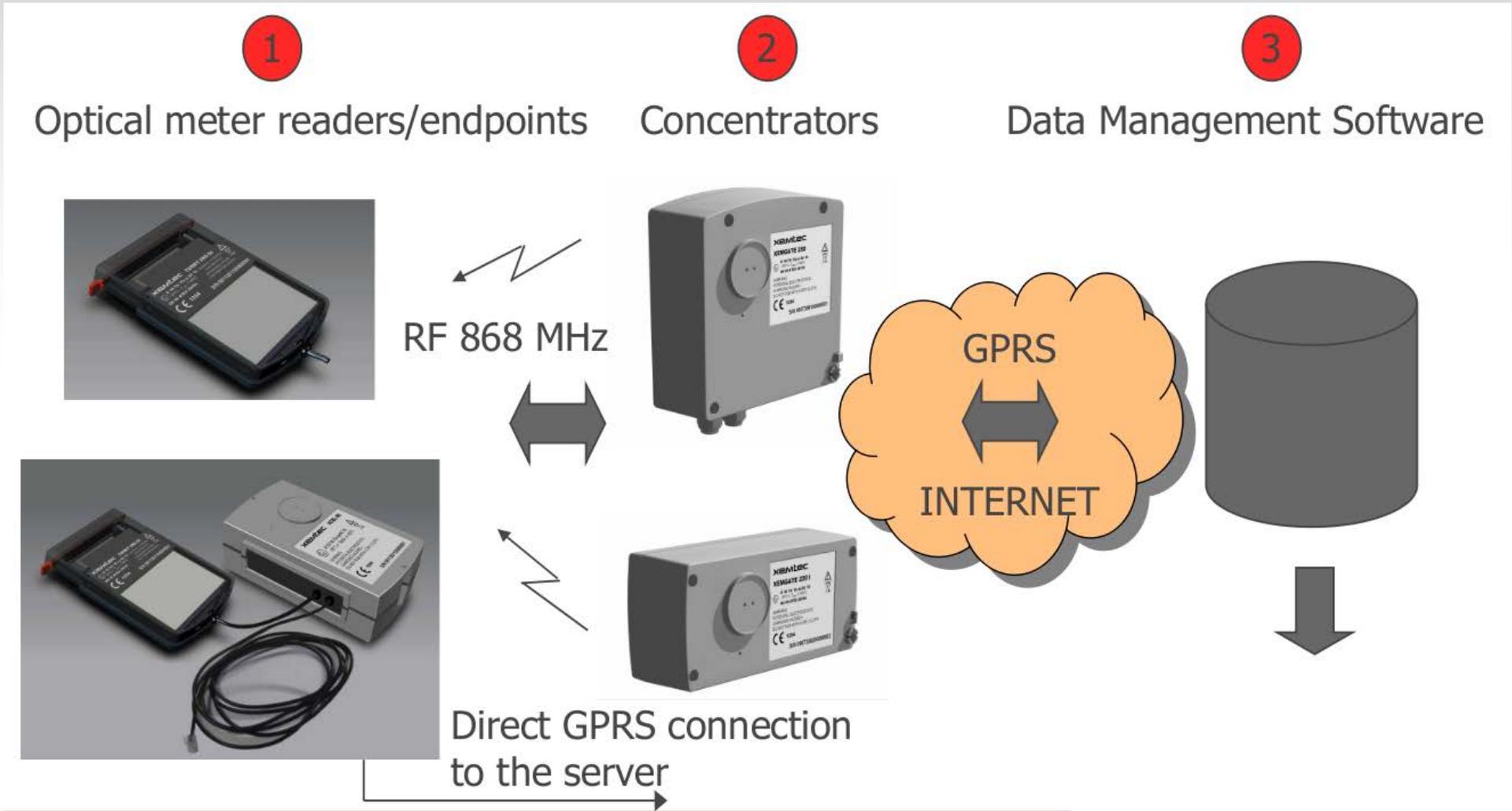


CLASSIFIER

- Transformation invariant recognition
- Massively parallel architecture (50'000 parallel multipliers)
- 100 million multiply-and-add operations per second
- Low-power (1mW !)



How does our solution work?



Additional advantages

- The data is sent directly to the database of the invoicing software
- It works for any type of counter
- It doesn't matter the age or wear in time of the meter
- Does not require power outlet. Battery powered
- Non-invasive technology
- Environmentally friendly

Battery powered

- Tadiran Lithium Thionyl battery with a guaranteed life span of 10 years
- Unpressurized electro-chemical system
- Limited area of surface electrodes to avoid short circuits
- Hermetic isolation of the cells from the external environment for optimal functioning while sudden changes in temperature occur
- Non-flammable electrolyte
- Does not contain heavy metals

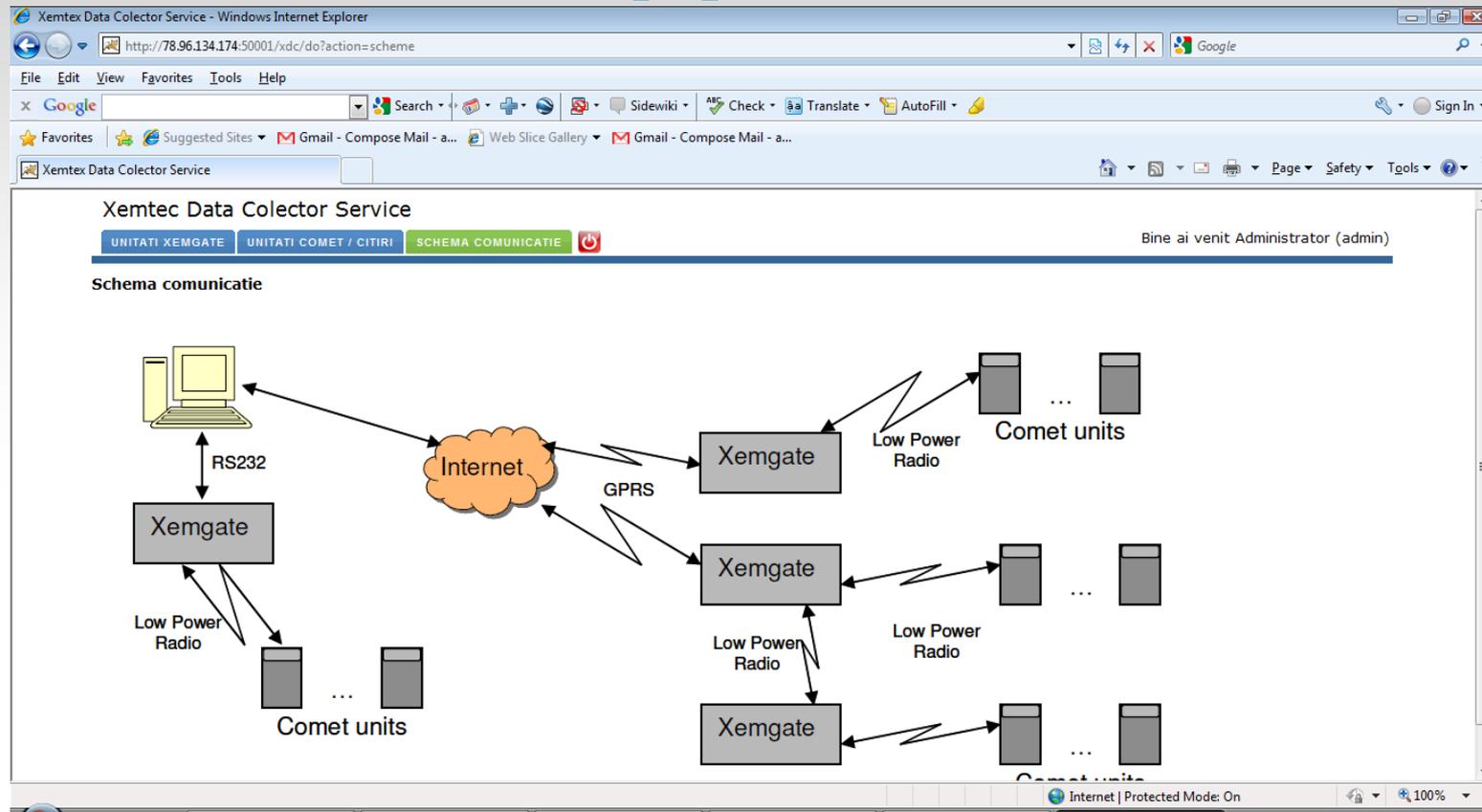
The test of time

- Revolutionary technology developed by the Swiss company Xemtec and implemented with success in major European projects
- Continuously developed technology for over 10 years, patented and awarded for innovation
- Successful implementations: National Grid (UK), SWM (Germany), FLUXYS (Belgium)
- ATEX Certification

The software application

- The software is a WEB-Data-Base type on Java technology and can run on any J2EE compatible application server (SAP NetWeaver, Oracle, Tomcat, etc.) and any database (Oracle, MS-SQL, MySQL, etc. .) at the customer's request
- The client application is accessible through any internet browser (IE, Opera, etc.) and it runs on any PC with minimal hardware resources

The software application



- The application displays in GIS format information regarding the location, structure and status of the reading equipment, data concentrators and data channels

The software application

The screenshot shows a web browser window displaying the Xemtec Data Collector Service. The page title is "Xemtec Data Collector Service" and the URL is "http://78.96.134.174:50001/xdc/do?action=comet.list". The interface includes a navigation menu with buttons for "UNITATI XEMGATE", "UNITATI COMET / CITIRI", and "SCHEMA COMUNICATIE". A user greeting "Bine ai venit Administrator (admin)" is visible. Below the navigation, there is a section titled "Lista unitati COMET" containing a table with the following data:

NR. CRT.	SERIE	VERSIUNE	CIFRE ZECIMALE	LOCALIZARE	CLIENT	DATA ULTIMEI CITIRI	ISTORIC CITIRI	
1.	0812211000003552	comet-ep-v3.50	5	0	Erou Iancu Nicolae nr 20	ciocan ionut	03.12.2009 20:12	
2.	0812211000003549	comet-ep-v3.50	5	0	calea mosilor nr.1 bl. 1 sc a ap.1	georgescu constantin	24.11.2009 00:44	
3.	0812211000003551	comet-ep-v3.50	5	0	calea mosilor nr.1 bl. 1 sc a ap. 3	vasilescu cornel	24.11.2009 00:40	
4.	0812211000003550	comet-ep-v3.50	5	0	calea mosilor nr.1 bl. 1 sc a ap. 2	popescu vasile	24.11.2009 00:38	

- The application will provide the management of the COMET units with all the significant parameters and associated interdependencies (data concentrators, “on demand” readings, equipment status etc.)

The software application

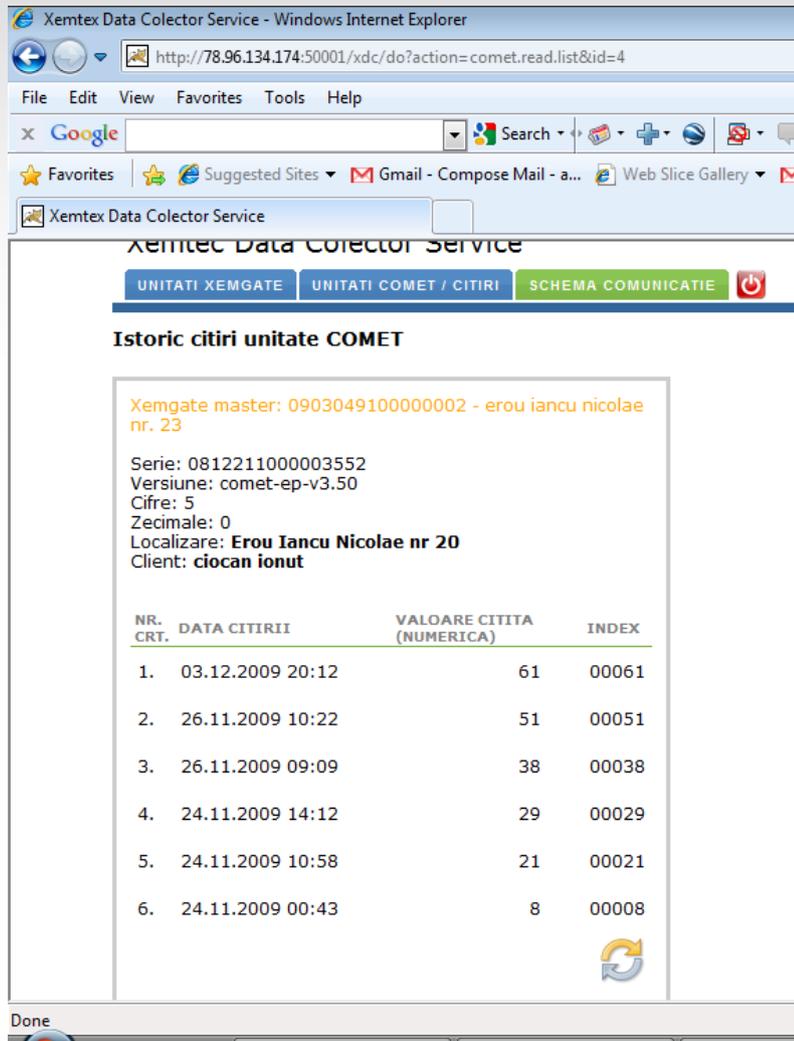
The screenshot shows the Xemtec Data Colector Service web application running in Internet Explorer. The browser address bar shows the URL: <http://78.96.134.174:50001/xdc/do?action=xemgate.list>. The application title is "Xemtec Data Colector Service". The navigation menu includes "UNITATI XEMGATE", "UNITATI COMET / CITIRI", and "SCHEMA COMUNICATIE". The user is logged in as "Administrator (admin)".

Lista unitati XEMGATE

NR. CRT.	SERIE	LOCALIZARE	VERSIUNE	DATA ULTIMEI CONEXIUNI	UNITATI COMET ATASATE
1.	0903049100000001	calea mosilor nr. 165	xg-015-v0.18	24.11.2009 00:38	0812211000003549 calea mosilor nr.1 bl. 1 sc a ap.1 georgescu constantin 0812211000003551 calea mosilor nr.1 bl. 1 sc a ap. 3 vasilescu cornel 0812211000003550 calea mosilor nr.1 bl. 1 sc a ap. 2 popescu vasile
2.	0903049100000002	erou iancu nicolae nr. 23	xg-015-v0.18	03.12.2009 20:12	0812211000003552 Erou Iancu Nicolae nr 20 ciocan ionut

- The management structure of the reading equipment organized by area concentrators

The software application



Xemtec Data Collector Service

UNITATI XEMGATE UNITATI COMET / CITIRI SCHEMA COMUNICATIE

Istoric citiri unitate COMET

Xemgate master: 0903049100000002 - erou iancu nicolae nr. 23

Serie: 0812211000003552
Versiune: comet-ep-v3.50
Cifre: 5
Zecimala: 0
Localizare: **Erou Iancu Nicolae nr 20**
Client: **ciocan ionut**

NR. CRT.	DATA CITIRII	VALOARE CITITA (NUMERICA)	INDEX
1.	03.12.2009 20:12	61	00061
2.	26.11.2009 10:22	51	00051
3.	26.11.2009 09:09	38	00038
4.	24.11.2009 14:12	29	00029
5.	24.11.2009 10:58	21	00021
6.	24.11.2009 00:43	8	00008

- Management module of a COMET reader device parameters for a particular subscriber with the option to request status or read “on demand”.
- The module allows for the programming of the time intervals for reading each single device.

Thank you !