

"The New Generation of Electronic Device Family for the wireless Monitoring of Environmental Factors"

9-10 septembre 2008 Gap-Charance

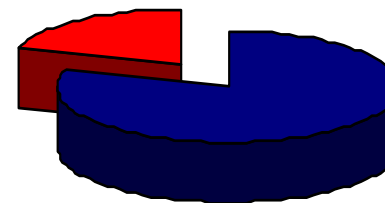
Montalbano Technology (MT)

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- ❑ Previous Technical Branch of Montalbano
Industria Agroalimentare S.p.A.
- ❑ Spun-off Sept 2005
- ❑ Headquarter in Genoa (Italy)
- ❑ Montalbano Technology is privately
owned and Intesa San Paolo has a
minority share
- ❑ Efficient and continuous
partnership



IntesaSanPaolo



Private owned

INTESA  **SANPAOLO**

MONTALBANO
TECHNOLOGY



❑ **SIIT SME Consortium member:**



❑ **Main partnership:**



❑ **Others partnership:**

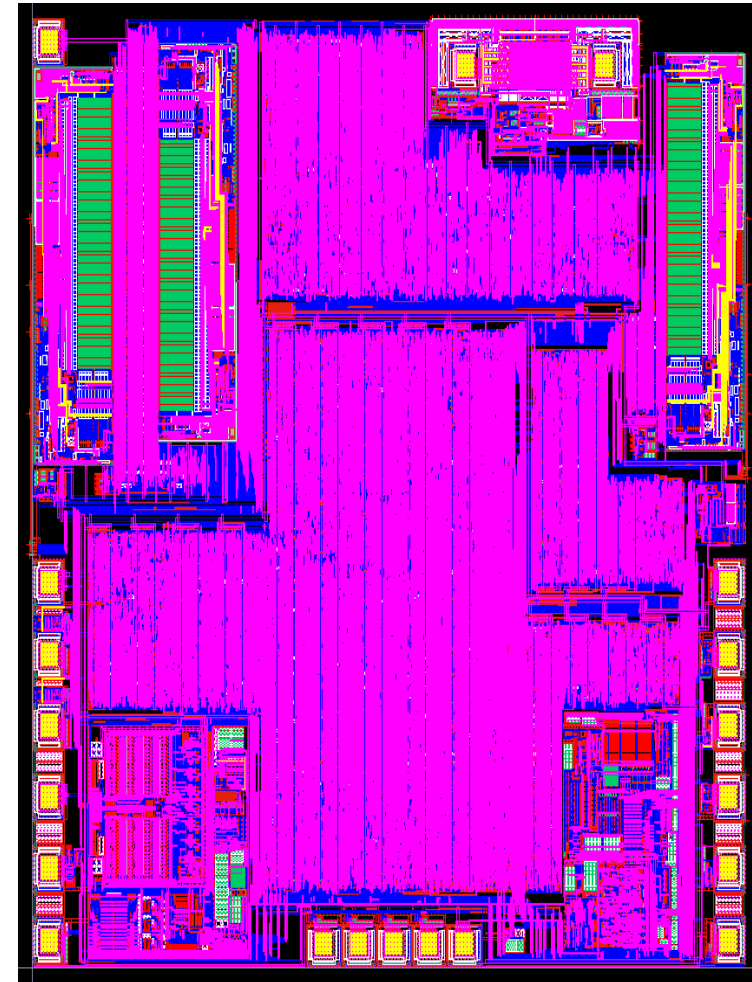


Fraunhofer
Gesellschaft

MTSens an innovative solution

□ Smart Card able to monitoring and storing environmental data

- Sensor interface
- No volatile memory
- Micro-controller
- Radio-Interface
- Quartz oscillator



MT product family

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MTSHOCK



- ▶ Monitoring shocks and vibration



- ▶ Monitoring temperature

MT HUMIDITY



- ▶ Monitoring relative humidity and temperature



MTSENS

*Innovation Award 2008 -
Berlin - Fruit Logistica*

Application Field

- Logistic**
- Food**
- Pharmaceutical**
- Cut flower**
- Museum**

MTsens on the field two examples



ice cream pilot



frozen food pilot

Ice Cream Pilot at Unilever

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- Purpose:
 - increasing the quality of ice creams by discovering if/when/where the cold supply chain breaks

- Method:
 - by using semi-passive temperature sensors based on RFID technology

- Unilever Comments:
 - “Fantastically Useful Results”



Unilever Hungary Looks for Weak Links in Ice Cream's Cold Chain

Last summer, the company used temperature-sensing battery-assisted RFID tags to monitor storage and handling conditions at the factory, distribution centers and stores.

By Rhea Wessel

Jan. 21, 2008—Behind every ice cream cone we eat is a logistics cold chain of mammoth proportions. If the cold chain is broken, the breach can have a severe effect on the ice cream's quality.

Unilever Hungary, a manufacturer of ice cream and other products, such as Dove soap and Lipton tea, explains that if ice cream warms above -18 degrees Celsius (-4 degrees Fahrenheit), its quality may suffer. And if temperatures rise further, the ice cream can deteriorate even more significantly. Since the product can change hands up to 10 times between production and consumption, ice-cream makers need a method for tracking storage and handling conditions.



ÁLLAMI NYOMDA
STATE PRINTING COMPANY



Frozen Food pilot

❑ End user

- Anonymous global food company

❑ Requirements:

- Detailed cold chain analysis

❑ Method:

- By using semi-passive temperature sensors based on RFID technology



Single delivery description

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- ❑ **Monitoring frozen food, ice cake temperature during the cold chain**



pre freeze cell
CDP



transportation



Final distributor

Positioning on the container

- 10 MTsens per truck
- Specific positioning
- UID (unique identifier)
- Wake-up time: 5 minutes

Number MTsens	Period [min]	UID	positioning
1	5	E002FD8836CB01DB	front left side
2	5	E002FD8836CB03C8	intermediate left side
3	5	E002FD8836CB0367	rear left side
4	5	E002FD8836CB03A5	front right side
5	5	E002FD8836CB01B7	intermediate right side
6	5	E002FD8836CB0337	rear right side
7	5	E002FD8836CB0323	front center
8	5	E002FD8836CB01A3	intermediate center
9	5	E002FD8836CB039B	rear center package inside
10	5	E002FD8836CB0350	rear center package outside

Comparison

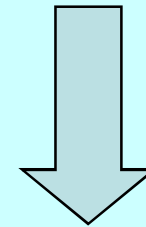
- ❑ One MTsens placed next to the truck reference Temperature sensor.
- ❑ Very similar data (values, average, variance)

Comparison between MTsens and truck reference Temperature sensor

MTsens	Samples numbers	186
	average	-25.04°C
	variance	2.87

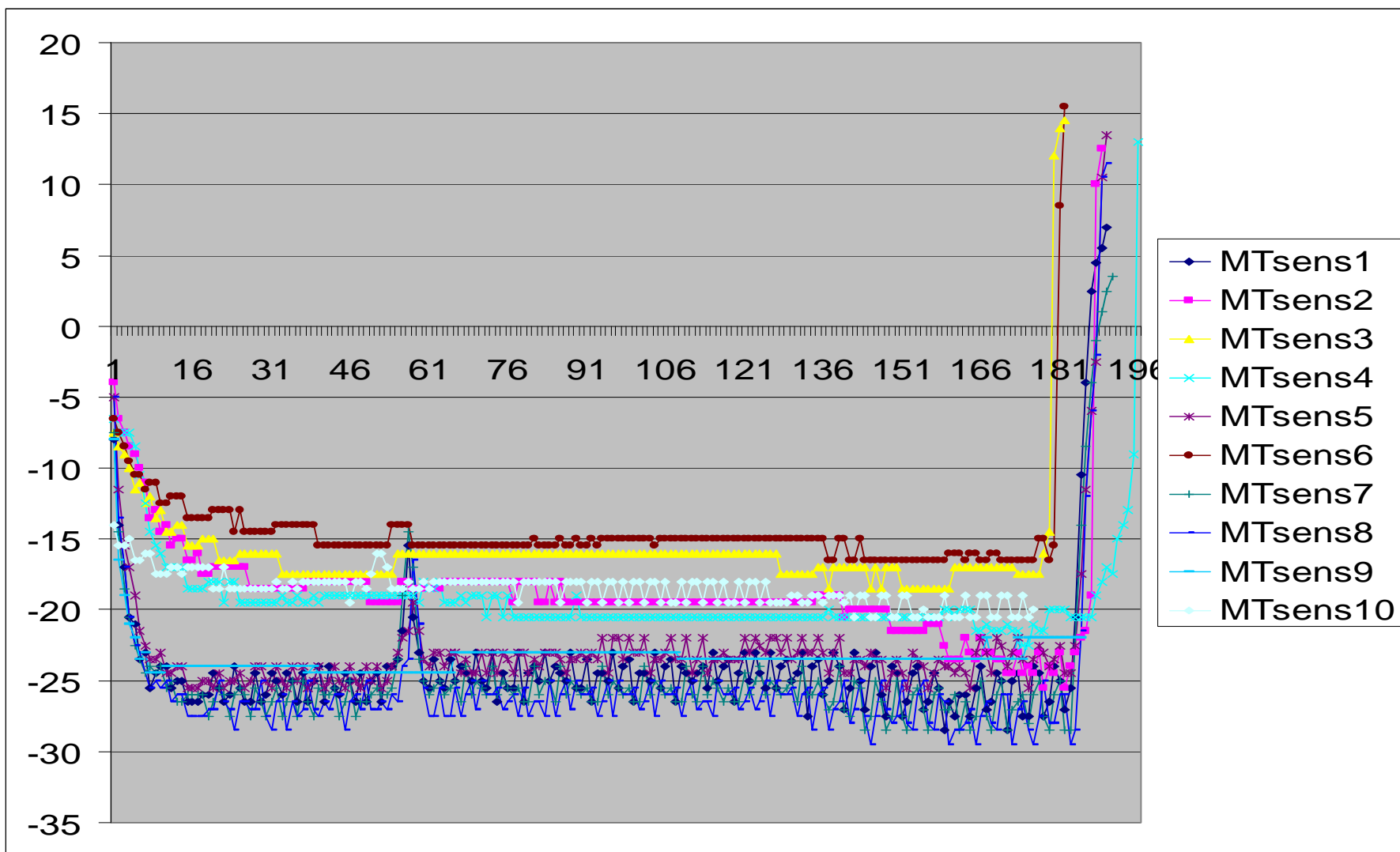
TruckS	Sample numbers	89
	average	-24.57°C
	variance	2.69

Same
positioning



Same values

Stored temperature graphic



Average Values

MTsens number	Average [°C]	UID	position
1	-24.81	E002FD8836CB01DB	front left side
2	-19.40	E002FD8836CB03C8	intermediate left side
3	-15.12	E002FD8836CB0367	rear left side
4	-19.90	E002FD8836CB03A5	front right side
5	-23.20	E002FD8836CB01B7	intermediate right side
6	-13.96	E002FD8836CB0337	rear right size
7	-25.04	E002FD8836CB0323	front central
8	-26.18	E002FD8836CB01A3	intermediate central
9	-23.51	E002FD8836CB039B	rear central inside package
10	-18.59	E002FD8836CB0350	rear central outside package

Comments

- Temperature is not uniform inside the container. Rear left and right sides pallets are not compliant with prescriptions (average values of -13.96°C and -15.12°C)**
- MTsens allowed the supplier to evaluate the package temperature inertia.**
- MTsens allowed the supplier to modify its process**

Contact Details

Q&A

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