



# SUPERMICRON

View video: <https://www.youtube.com/watch?v=a2UlbkG800M>

# SMART SKIN SENSOR SYSTEM

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## SENSOR

deformation sensor:

composite and sensing  
carbon fibre or carbon  
nanotubes

tilt/vibration sensor,  
temperature sensor,  
transmission unit



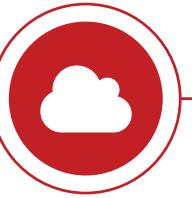
## EXTERNAL BATTERY UNIT

applied on the surface  
perfectly resistant to  
external agents



## GATEWAY

on board GPRS antenna  
high range 868 MHz full  
wavelength antenna.  
embedded memory



## CLOUD SERVICE

central server on Cloud  
GUI  
remote interventions

# FOUR **VALUES**

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Each Smart Skin Sensor measures four main values: strain, temperature, tilt and seismic activity, further values are easily integrable.



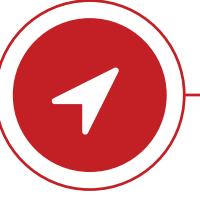
## **STRAIN**

Next generation strain sensor. Static, perfectly resistant to external agents and requires no wiring.



## **TEMPERATURE**

Temperature sensor included in the sensor system. Accuracy of +/- 0,1°C (-30/+75°C range)



## **TILT**

Integrated tilt measurement for data contextualization. Accuracy of 0,1° on three axes.



## **SEISMIC ACTIVITY**

Integrated seismometer, able to trigger higher acquisition frequency (oversampling).

# SUPERMICRON

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SuperMicron offers a completely new approach to SHM: standard, low cost and stand-alone solutions able to adapt to custom projects. At the heart of the systems are innovative, patented Smart Skin Deformation Sensors, based on the use of advanced composite material.



## STANDARD

280 mm x 130 mm x 0,25 mm  
Wireless connectivity 868 Mhz  
Polyester fabric / epoxy resin  
Environmental protection IP68



## LONG

1000 mm x 130 mm x 0,25 mm  
Wireless connectivity 868 Mhz  
Polyester fabric / epoxy resin  
Environmental protection IP68



## ROD

280 mm x 80 mm x 0,25 mm Wireless  
connect 868 Mhz/USB Polyester  
fabric / epoxy resin Environmental  
protection IP68



## CUSTOM

Ultrathin deformation sensors of  
custom size and shape according  
to customer needs

# ADVANTAGES OF THE SYSTEM

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**Easy bonding on most materials**, also retrofit

**Lower cost of adoption**, costs of purchase, installation and maintenance

**Durability of the system:** as the structures to be monitored have a very long life cycle



**Self-diagnosis of the sensors:** in structures at high risk, such as e.g. pipelines, the reliability of the system is an essential requirement

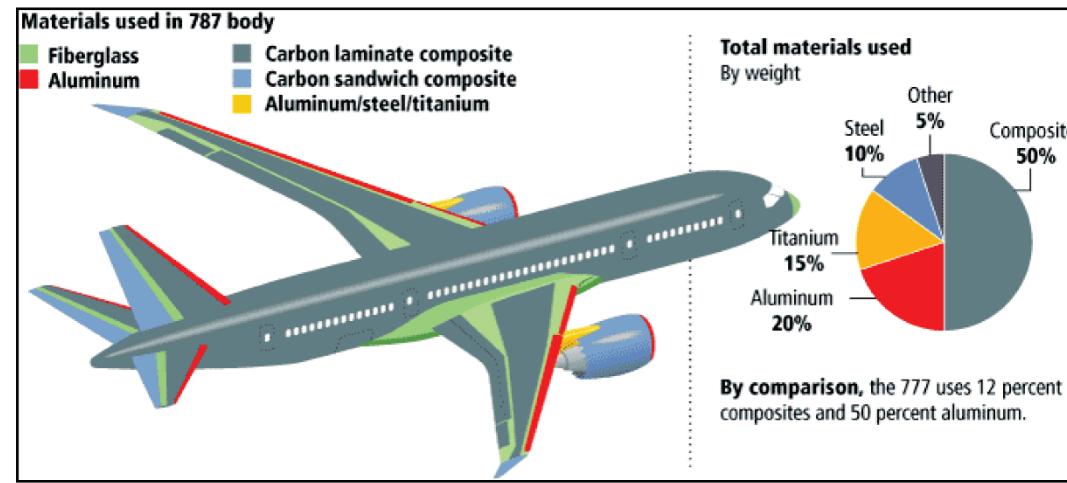
**Versatility:** simultaneously measures different parameters

**Usability of information:** transformation of raw data into clear information to reduce decision times and support decision making;

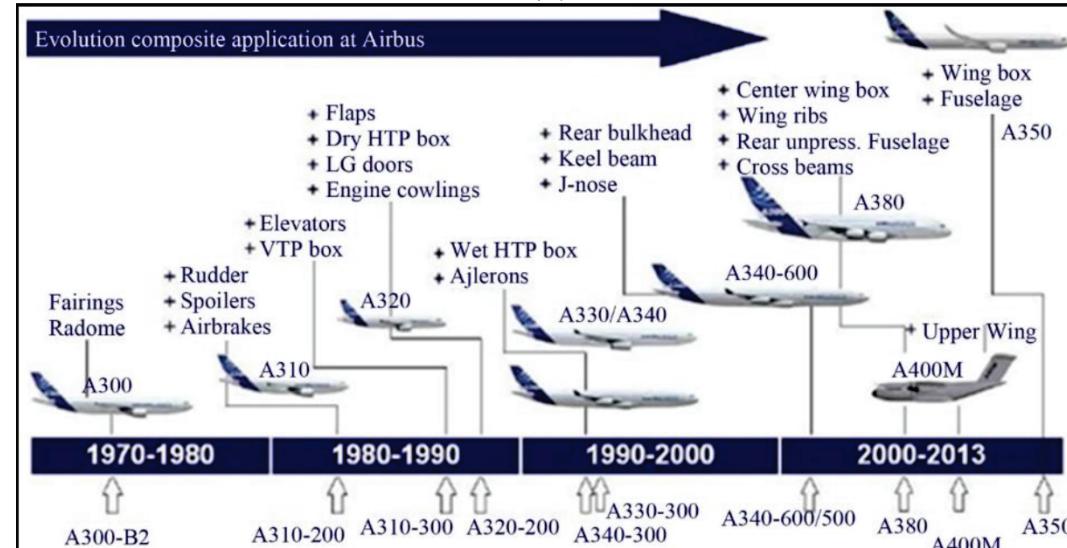


**High spatial resolution:** sensor size is flexible and up to 3m

# AEROSPACE



(a)



(b)

# AWARD-WINNING TECHNOLOGY

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HORIZON 2020 SME INSTRUMENT PHASE 1 FUNDED



FIRST ITALIAN TECHNOLOGY AND SECOND IN EUROPE, AND OVERALL HIGHEST COMMERCIAL POTENTIAL IN JAPAN



SEAL OF EXCELLENCE, HORIZON 2020, SME INSTRUMENT PHASE 2



FINALIST AT JEC WORLD 2018 STARTUP BOOSTER



FINALIST AT CNA INNOVATION PRIZE CAMBIA-MENTI 2017



SECOND PRIZE AT BNP PARIBAS CARDIF OPEN-F@B 2017