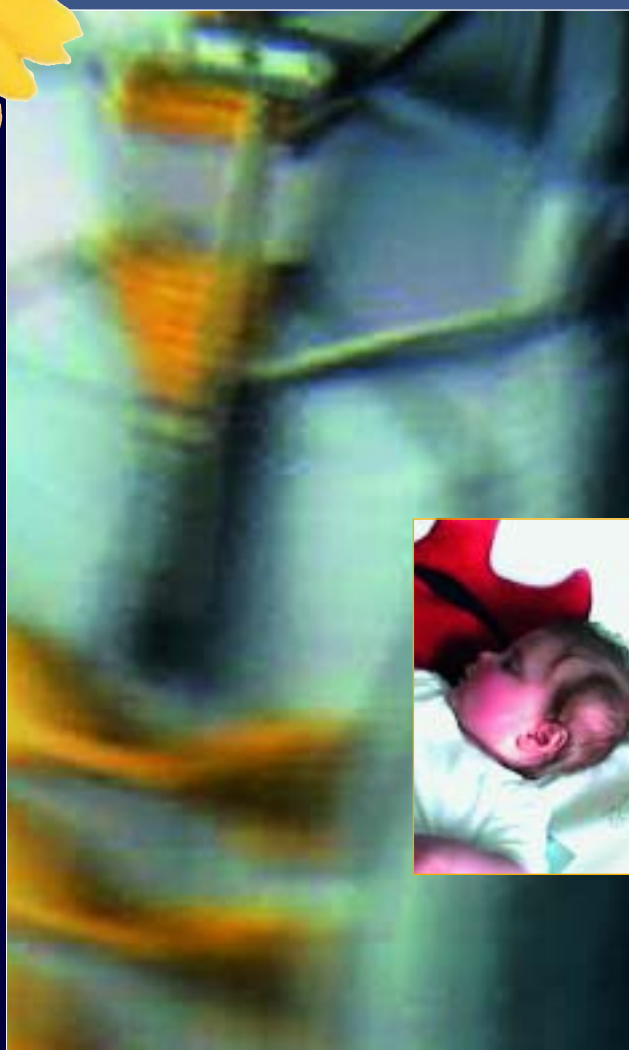
BR-184 (X)
May 2003

esa

BABYGUARD

Technology Transfer Programme



Technology Transfer Programme

What do astronauts and babies have in common? This brochure outlines the application of innovative space technologies for reliably monitoring your baby's breathing.

In the interests of medical research, astronauts have been subjected to breathing and motion monitoring experiments during their stays in space on both the Space Shuttle and the International Space Station. The scientific data gathered during those missions have improved the quality of our daily lives in several areas. With the new insights that the data have provided, hundreds of new products have already been developed for non-space applications.

As we move into the 21st century, we are on the verge of being able to deliver exciting new products for the baby-care market. This brochure describes just one of the new and unexpected ways in which space technology will improve babies' safety and hence also provide parents with greater peace of mind.

Pierre Brisson
Head of the Technology Transfer and Promotion Office

EXPLOITING PROVEN SPACE TECHNOLOGY

In the early nineties Verhaert participated in the RIP-project, which involved monitoring astronauts' breathing under microgravity conditions using a specially instrumented space suit. Having successfully designed and delivered this first 'smart suit' for astronauts, the company was commissioned to develop the Anbre instrument, to monitor the astronauts' motion in space, in order to design manned space structures more ergonomically.

The techniques and technologies used in these two space developments were subsequently identified as potential Technology Transfer candidates to support research into Sudden Infant Death Syndrome (SIDS). This in turn led to the partial funding by the Flemish Government of the 'Mamagoose' project. Conducted by Professor Paiva at the Biomedical Physics Laboratory of the University of Brussels, this project has integrated the space-developed motion sensors into high-tech baby pyjamas for infant monitoring to facilitate research into SIDS.

PERFECTING BABYGUARD

We tend to take it for granted that all babies subject to a SIDS-risk can be routinely monitored with appropriate professional medical equipment, but ever more financially restrictive social security regulations mean that in practice few parents are actually being allocated such devices. This trend comes at a time when parents are becoming more worried, rather than less, about the health risks to their infants, as the success of baby phones confirms.

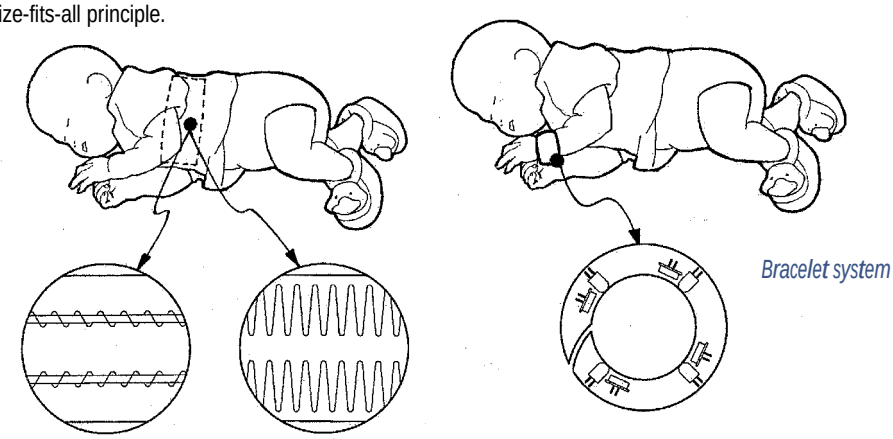
BABYGUARD

As technology advances, parents are eager to use more advanced monitoring devices, and the Mamagoose-based 'Babyguard' goes a long way towards meeting this need. In its development, Verhaert's highly skilled engineers have taken the following design drivers into account:

- ◊ Reliable operation
- ◊ Good ergonomics and user comfort
- ◊ Compactness
- ◊ Affordable pricing
- ◊ Simple and foolproof user interface
- ◊ Problem-free operations in diverse environments: cot, buggy, car seat, etc.

RELIABLE USE AND EASE OF OPERATION

'Babyguard' relies on multiple sensors to monitor the baby's respiration. This ensures that there will be fewer false alarms and guarantees reliable operation under all conditions. Ensuring ease of operation was also a primary concern for Verhaert's engineers, who therefore developed two variants: a chest pad and a bracelet to be worn around the ankle, foot or wrist. Both follow the one-size-fits-all principle.



Chest pad system

Bracelet system

INTELLIGENT MONITORING MEETS FASHION

'Babyguard's' sensors are linked to a miniaturized computer unit which sounds an alarm whenever a critical event occurs. It is based on an intelligent algorithm to prevent false alarms and has an extremely simple user interface. Its small dimensions and ergonomic design (four-leaf-clover shaped) mean it can easily be placed in the cot next to the baby. Three LEDS indicate on/off and battery status. A reset button automatically recalibrates the system for a new monitoring session after an alarm has been sounded.

'Babyguard' is the first such device combining high-end electronics with fashion, aesthetics and ergonomics. Parents can choose to put the four-leaf-clover housing directly into the cot or wrap it in a cuddly teddy bear.

VERHAERT
NEW PRODUCTS & SERVICES

TO LEARN MORE ABOUT 'BABYGUARD'

PLEASE CONTACT:

Mrs Ann Van Mele
Account Manager
Verhaert New Products
& Services NV
Hogenakkerhoekstraat 21
9150 Kruibeke, BELGIUM

Tel +32 (0)3 250 14 14
Fax +32 (0)3 254 10 08
Ann.vanmele@verhaert.com
http://www.verhaert.com

BENEFITS FOR OUR DAILY LIVES: THE ESA TECHNOLOGY TRANSFER PROGRAMME

Over the past 35 years, the European space industry has gained considerable expertise in building, launching, controlling and communicating with satellites. From this long experience of how to overcome the hazards and problems created by such a hostile environment, many valuable new technologies, products and procedures have been developed. Today, this expertise is improving our daily lives by providing many innovative solutions for products and services on Earth.

Groundbreaking European space technologies are becoming increasingly more available for development and licensing to non-space industry through the process of technology transfer. The ESA Technology Transfer Programme has already achieved over 150 successful transfers or spin-offs from space to non-space sectors.

This success is reflected by the fact that since 1991 technology transfer has generated more than 20 million Euros in turnover for European space companies and 120 million Euros for the non-space industries involved. Already 2,500 jobs and 25 new companies have been created.

The ESA Technology Transfer Programme is carried out by a network of technology brokers across Europe and Canada. Their job is to identify technologies with potential for non-space applications on one side, and on the other side to detect the non-space technology needs. Subsequently, they market the technology and provide assistance in the transfer process.

Dr. P. Brisson
Head of the Technology Transfer and Promotion Office
European Space Agency-ESTEC
P.O. Box 299
2200 AG Noordwijk
The Netherlands

Tel.: + 31 (0)71 565 4929
Fax: + 31 (0)71 565 6635
E-mail: pierre.brisson@esa.int

Dr. D. Raitt
Technology Transfer and Promotion Office
European Space Agency-ESTEC
P.O. Box 299
2200 AG Noordwijk
The Netherlands

Tel.: + 31 (0)71 565 3017
Fax: + 31 (0)71 565 6635
E-mail: david.raitt@esa.int

or contact one of the Technology Transfer Network brokers:

MST Aerospace GmbH
Eupener Str. 150
D-50933 Cologne, Germany
URL: http://www.mst-aerospace.de

Tel.: + 49 (0)221 949 89 20
Fax: + 49 (0)221 491 24 43
E-mail: office@mst-aerospace.de

JRA Aerospace & Technolgy Ltd.
JRA House, Taylors Close
Marlow, Buckinghamshire
SL7 1PR, UK
URL: http://www.jratech.com

Tel.: + 44 (0)1 628 89 11 05
Fax: + 44 (0)1 628 89 05 19
E-mail: mail@jratech.com

D'Appolonia SpA
Via San Nazaro, 19
I-16145 Genoa, Italy
URL: http://www.dappolonia.it

Tel.: + 39 (0)10 362 81 48
Fax: + 39 (0)10 362 10 78
E-mail: info@dappolonia.it

Nodal Consultants
209-211, rue de Bercy
F-75585 Paris Cedex 12, France
URL: http://www.nodal.fr

Tel.: + 33 (0)14 002 7557
Fax: + 33 (0)14 002 7544
E-mail: info@nodal.fr

or visit the ESA Technology Transfer Website: **http://www.esa.int/ttp**

or the ESA-supported technology market places: **http://www.technology-forum.com**

and **http://www/t4techonline.com**

Published by
ESA Publications Division
ESTEC, PO Box 299
2200 AG Noordwijk
The Netherlands

Editor
Bruce Battrick

Design & Layout
Leigh Edwards

ISSN No.: 0250-1589
ISBN No.: 92-9092-722-4