

EUREKA PROJECT E!2412 - EUROCARE AIRCARE

1. General description

Project	E! 2412 - EUROCARE AIRCARE	Status	Announced - 28-JUN-2001
Title	New Ecologically Compatible System For The Conservation Of Cultural Treasures In Museums.		
Class	Sub-Umbrella	Technological area	Environment
Start date	01-SEP-2000	End date	01-SEP-2002
Duration	24 months	Total cost	4.3 Meuro
Partner sought	Yes		
Summary	New Technology Concerning The Monitoring, Control And Regulation Of The Atmosphere In A Museum Environment For The Care And Conservation Of Cultural Treasures.		

Budget and duration

Phase	Budget(Meuro)	Duration (Months)
Definition phase	1.9	10
Implementation phase	2.4	14
Total	4.3	24

Member contribution

Member	Contribution	Position	Since
Italy	70.00%	Contact Member	05-JUL-2000
France	.00%	Notified Withdrawn	10-JUN-2003

Participants

Company	Country	Type	Role
Isolcell Italia S.P.A.	Italy	SME	Main

2. Project outline

Project description

The project will involve the development of a new and unique technology for the conservation of cultural treasures in museums which, based on the development of an electronic system by means of biosensors, enables the microclimate to be monitored, regulated and controlled within physical parameters (temperature and humidity), and within biological parameters (bacteria and toxic substances).

The integration of a monitoring system with an ecologically compatible unit for the treatment of air makes active intervention possible in safeguarding works of art.

Keywords: conditioning.

Technological development envisaged

This EUREKA project will allow the following results to be achieved:

- determination of the physical and biological parameters necessary for the safeguarding of works of art;
- development of a prototype biosensor interfacing with a J.I.T. (Just-In-Time) monitoring system 24 hours a day;
- development of a prototype unit for the monitoring, communication and control of bacteria and toxic substances in museum environments, according to the type of work of art;
- development of a the HVAC (Heating, Ventilation and Air Conditioning) prototype system;
- design and development of a prototype air conditioning unit (chiller);
- development of the BUS for the care of art treasures, relative to the monitoring of the atmosphere and the flow of ventilated air, and depending on the number of visitors;
- modular study of the air conditioning and treatment system for various environments within the same museum building (offices, meeting rooms, restoration workshops, etc.);
- development of software for the automatic control of the chiller integrated into the AIRCARE system;
- building of hardware and computerization of the management of environmental factors in real-time (24 hours a day);
- development of a prototype in a single unit for the control of air quality and its relative parameters (humidity, temperature, dust content, gases, etc.), of individual works of art by means of a distributed artificial intelligence system;
- development of diagnostic devices according to the type of conservation of works of art necessary;
- development of prototype intelligent sensors.

Markets application and exploitation

The new technology will allow the diversification of the targets of the end-users and the pluses, thereby increasing

sales with an average increment of 14%. It is envisaged that a positive R.O.I.(return on investment) will be achieved in 2003, when the operating margin will reach an 11% increase.

The distribution agreement with the French partner will ensure the protection and development of the European market which is highly receptive to new technologies.

Project codes

BSI

CIL.IC	humidity
GDG	particulate air pollutants
GFP	pollution control
GPN	climatic protection
RDK.K	museums
RDK.M	art galleries
RK	thermal environment systems
RNN	communication systems (buildings)
VEE.ME	air cleaning equipment
VEE.MEJ	air filters

NACE

33301	Manufacture of electronic industrial process control equipment
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3. Main participant

Company	Isolcell Italia S.P.A. Via A. Meucci, 7 39 055 Laives Italy Tel +39 0471 95 40 50 Fax +39 0471 95 35 75 www.isolcell.it
Contact	Dr. Ivano Villa Managing Director Tel Fax isolcell@isolcell.it
Organisation type	SME
Participant role	Main

Contribution to project

Study of the monitoring of polluting factors and air quality in museum environments, study of the system of regulation and control of air conditioning, study of intelligent biosensors.

Expertise

Expertise: founded in 1958, their activities have undergone constant development gaining experience in the field of controlled atmosphere; experienced in the engineering and construction of installations, machines and systems capable of modifying atmosphere and/or producing the gases required (N₂, O₂, CO₂, etc.); has studied new ecologically compatible technologies for the conservation of fruit, cereal and foodstuffs in general; has also developed apparatus which uses inert gases for disinfecting without the need for toxic substances. Contribution: - study of a system for monitoring bacteria and toxic substances - design and development of a ecologically-compatible prototype system for the treatment of air in a museum integrated with the works of art it contains - study of a supervision system integrated into the various works of art to be protected.