EUREKA PROJECT E!401 - EUROCARE CONCRETE

1. General description

Project	E! 401 - EUROCARE CONCRETE	**Status**	Finished - 22-JUL-1993
Title	**On-Site, Non-Destructive Testing (Ndt) Of Concrete Rebar Corrosion Rate Using Electrochemical Techniques.**		
Class	Sub-Umbrella	**Technological area**	Environment
Start date	01-JUL-1989	**End date**	01-JAN-1992
Duration	30 months	**Total cost**	1.08 Meuro
Partner sought	No		
Summary	Carry Out Techniques And Portable Devices To Measure The Corrosion Rate Of Rebars In Reinforced Concrete Structures.		

Budget and duration

Phase	Budget(Meuro)	Duration (Months)
Feasibility phase	0	6
Development stage	0	24
Total	**1.08**	**30**

Member contribution

Member	Contribution	Position	Since
Spain	**67.00%**	**Notified Finished**	**22-JUL-1993**
Sweden	33.00%	Notified Finished	22-JUL-1993

Participants

Company	Country	Type	Role
Geotecnia Y Cimientos S.A.	**Spain**	**SME**	**Main**
Centro Nacional De Investigaciones Metalurgicas	Spain	Research Institute	Partner
Swedish Cement And Concrete Research Institute	Sweden	Research Institute	Partner
Instituto De Ciencias De La Construccion "Eduardo Torroja"	Spain	Research Institute	Partner

2. Project outline

Project description

Heritage conservation.

Technological development envisaged

Measurement on-site of the corrosion rate of reinforcements in concrete structures by a non-destructive electrochemical technique (Polarization resistance). The application of this technique implies the making of a portable device with data-logger and special sensors.

Markets application and exploitation

Damaged structures suffering from corrosion of reinforcements and repaired ones. Also, new structures subject to aggressive environments (maritime, tropical climates).
By GEOCISA in SPAIN.

Project codes

BSI

B	measurement, testing and instruments
BCB.X	probes
DDT/DDU	corrosion
DFC	electrochemistry
GC/GF	pollution
K	electrotechnology
VU	cement and concrete technology
VUK/VUS	concretes
ZO	history
ZV/ZY	culture

NACE

33201	Manufacture of electronic instruments and appliances for measuring, checking, testing, navigating and other purposes, e
7310	Research and experimental development on natural sciences and engineering

3. Main participant

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Organisation type SME
Participant role Main

Contribution to project

Coordination of project, construction of equipment to measure corrosion rate, measurement of corrosion rate in deteriorated structures, initial exploitation.

Expertise

The company works, among many other projects, on road and motorway survey and maintenance. It has extensive laboratory facilities and equipment for on-site measurements such as footbridge FIP. Its engineers have been involved in the diagnosis and repair of many structures damaged by the corrosion of reinforcements. Formerly GEOCIA BEOTECNICA Y CIMIENTOS S.A.

4. Partner

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Organisation type Research Institute

Participant role Partner

Contribution to project

Developing of techniques to measure corrosion rates, measurement of corrosion rate in laboratory tests, supervision of measurement of corrosion rate in field tests.

Expertise

4. Partner

Company **Swedish Cement And Concrete Research Institute**
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Organisation type Research Institute
Participant role Partner

Contribution to project

Measurement of corrosion rate in Swedish deteriorated structures.

Expertise

Long tradition in studying the corrosion of steel reinforcements. In the past it has proposed a useful model for the prediction of service life of corroding structures.

4. Partner

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Organisation type Research Institute
Participant role Partner

Contribution to project

Developing of techniques to measure corrosion rate, measurement of corrosion rate in laboratory tests, supervision of measurements of corrosion rates in field tests.

Expertise

CEMIM and TORROJA have been working together since 1969 in electrochemical techniques for measuring corrosion rates of reinforced concrete. The researchers involved in EU 401 were the first to apply polarization resistance and they are now ahead in its application for on-site measuring.