

Technology Offer

Intelligent system of active diagnosis and prediction of degradation state of buildings in complex polluted environment

Summary

A Romanian research institute has developed an intelligent system of active diagnosis and prediction of degradation state of buildings in a complex polluted environment, to solve the problem of assisting the local authorities or investors in the process of decision-making for an optimal rehabilitation. The Romanian research institute is looking for SME partners, for joint further development regarding integration in software programs for architecture, in a technical cooperation agreement.

Creation Date	21 May 2015
Last Update	04 September 2015
Expiration Date	03 September 2016
Reference	TORO20150521001

Details

Description

A research institute located in Romania has developed an intelligent system of active diagnosis and prediction of degradation state of the buildings in complex polluted environment is composed of a product-program designed for intelligent and predictive processing for the diagnosis of the built structures, of procedures to retrieve information on the state of corrosion and corrosion determinants, procedures for retrieving information on monitored buildings as well as procedures for retrieving information on the biological environment.

The proposed system can form the basis of a service meant to solve local authorities problems or of investors' in the decision process, related to choosing the most appropriate construction type, situated in different regions with different environmental influences and different ways of building and exploitation, so as to justify funding for rehabilitation.

The software program has already been tested in laboratory conditions by the Romanian research institute and represents the subject of a Romanian copyright office request.

Current and Potential Domain of Application: Advanced systems architecture, for diagnosis and prediction state of buildings in complex polluted environment.

The research institute is looking for SMEs willing to develop the software in a technical cooperation agreement.

Advantages and Innovations

Innovative aspects for system could be concluded in:

- defining an integrated notion referring to the neighboring environment aggressiveness and, on the other hand, to a set of measuring methods in lab and in situ of its component parts;
- defining a knowledge set able to allow the static description and of the building and, at the same time, of the manner in which the neighboring environment acts against the artificial world

through the complex corrosion phenomenon;
 -utilization of the jColibri software tool in order to get the diagnose results by case-based reasoning;
 -elaboration of an implementation methodology for an expert system kernel, able to collect the information which, together with the information concerning historical background, allows the predictive diagnosis problem, plombing the building with reinforced concrete or other materials, so as to look like the historic one.
 Using intelligent system of active diagnosis and prediction of degradation state of the buildings in complex polluted environment could be useful for establishing:
 -appropriate rehabilitation time schedule for the building in case;
 -estimated investment for rehabilitation;
 -buildings with similar seismical risk;
 -adequate techniques to rehabilitate buildings and monuments;
 -optimal parameters for the design of the buildings situated in polluted environment.

Stage of Development

Under development/lab tested

IPR Status

Other

Comment Regarding IPR status

The software program represents the subject of a Romanian copyright office request (not granted yet), in force on the Romanian territory.

Keywords

Technology

01003001	Advanced Systems Architecture
01003010	Databases, Database Management, Data Mining

Market

02002001	CAD/CAM, CAE systems
02007006	Other system software
02007010	Education software
09003001	Engineering services

NACE

M.72.1.9	Other research and experimental development on natural sciences and engineering
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Network Contact

Issuing Partner

NATIONAL INSTITUTE OF RESEARCH AND DEVELOPMENT FOR OPTOELECTRONICS

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Open for EOI : **Yes**

Dissemination

Send to Sector Group

Sustainable Construction

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English

Client Country

Romania

Partner Sought

Type and Role of Partner Sought

- Type of partner sought: SME
- Specific area of activity of the partner: software development
- Task to be performed by the partner sought: software development as an independent product for architecture and also to be integrated in a CAD/CAM or CAE systems design software

Type and Size of Partner Sought

SME 11-50, SME <10, SME 51-250

Type of Partnership Considered

Technical cooperation agreement