



ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ  
ΕΥΡΩΠΑΪΚΟ ΤΑΜΕΙΟ  
ΠΕΡΙΦΕΡΕΙΑΚΗΣ  
ΑΝΑΓΕΝΝΗΣΗΣ



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## Innovation

In the national road network of Greece, rockfall incidents occur with high probability. These incidents can cause traffic interruption or even lethal accidents with severe consequences to the local and national economy.



# "istria"

Low cost system

Continuous real time monitoring

Installation of geodetical,  
meteorological and geotechnical  
instruments.

Rockfall incident prediction

Instant alarms and notification

Caution and instant safety measures

Easy installation in the field

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# "ISTRIA"

An integrated rockfall  
detection and monitoring  
system for highways

January 2013 - June 2015

Coordinating partner:  
General Consulting ISTRIA

May 2014



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INNOVATION GROWTH  
ΕΠΑΝ II  
ΕΣΠΑ 2007-2013  
η παράρτηση στο Πρόγραμμα της ανάπτυξης



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## Description:

The main target of the "ISTRIA" project is the development of an integrated rockfall monitoring and prediction system. The instant prediction of rockfall incidents can help significantly, the local authorities to take all the necessary safety measures in case where traffic is interrupted.

The main purpose of "ISTRIA" is the development of a low cost contemporary system, which will integrate innovative technologies and will have the flexibility to be adjusted to the characteristics of the monitoring region and needs of the end user.

The "ISTRIA" project is funded by the National Strategic Reference Framework Program (NSRF) 2007 -2013, Competitiveness and Enterprises (EPAN II), Innovation supported by research and technology, "Action Cooperation 2011", of the Hellenic Ministry of Development and General Secretariat for Research & Technology.



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## Main objectives:

- Investigation and definition of the major triggering mechanisms that can cause rockfall incidents in Greece.
- Definition of the rockfall detection instruments.
- Development of rockfall event detection and rockfall event verification algorithms.
- Development of the software platform for real time monitoring and instrument coordination.
- Trial installation and operation of the designed system in the field.

## Partners:

General Consulting ISTRIA

Laboratory of Rock Mechanics  
Technical Universities of Crete

Laboratory of Geodetics & Geomatics  
Technical University of Crete

Em. G. Lianakis



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## ISTRIA Overall Architecture

Deployment of rockfall detection instruments in the field

1. Accelerometer



2. Weather Station



3. Geophones



4. Digital Cameras



5. Motion Detection Cameras



Delegation of the collected data to the central server.

4G/Wifi/Ethernet

System server.  
Data processing, event detection,  
notification alarms real time.

HTTP access

Instrument monitoring,  
data visualization, system  
inspection through web  
browser.



HTML pages

