

## FINAL REPORT

<b>I</b>	<b>The Name of the Institution to be evaluated</b>	GIR – GEOLOGICAL INSTITUTE OF ROMANIA
<b>II</b>	<b>Evaluation Period</b>	May 19 <sup>th</sup> and 20 <sup>th</sup> 2012
<b>III</b>	<b>Members of the Team</b>	
	<b>1<sup>st</sup> Evaluator information</b>	
<b>A</b>	<b>Name, Surname</b>	Augustin Sanchez Arcilla CONEJO
<b>B</b>	<b>Affiliation</b>	Polytechnic University de Catalunha, Barcelona, Spain
	<b>2<sup>nd</sup> Evaluator information</b>	
<b>A</b>	<b>Name, Surname</b>	Serban MISICU
<b>B</b>	<b>Affiliation</b>	IFIN-HH
	<b>3<sup>rd</sup> Evaluator information</b>	
<b>A</b>	<b>Name, Surname</b>	Constantin COSMA
<b>B</b>	<b>Affiliation</b>	Institut: University Babes-Bolyai, Cluj
	<b>4<sup>th</sup> Evaluator information</b>	
<b>A</b>	<b>Name, Surname</b>	Vladica CVETKOVIĆ
<b>B</b>	<b>Affiliation</b>	University of Belgrade – Faculty of Mining and Geology
	<b>5<sup>th</sup> evaluator information</b>	
<b>A</b>	<b>Name, Surname</b>	Jean-Marie MARTIN
<b>B</b>	<b>Affiliation</b>	Environmental Science - EU comission

***The final report should contain:***

- 1) 1 page – Conclusions and recommendations;
- 2) At least N pages - Cel mult N pagini – observation of each evaluation team (N=number of teams);
- 3) 2 pages – justification of the mark awarded, for each of the 5 criteria, highlighting strengths and weaknesses, in accordance with the minutes/report of the visit;;
- 4) Only for institutions classified "A-":  
2 pages-specific measures, targets and recommendations to be met in a time of 2 or 3 years.

## 1) CONCLUSIONS AND RECOMMENDATIONS

The Geological Institute of Romania (GIR) is without doubt one of the research institutes in Romania having the best tradition in geological research. The institute hosts one of the most beautiful geological museums in Europe. The last two decades proved to be particularly severe in many respects for this institute but it seems that a new period of gradual, though a slow recovery, is under way. A critical task for the present day GIR management is to convince the decision makers and relevant authorities that the GIR must(?) be recognized as the State Geological Survey which performs tasks of supreme importance for the sustainable development of Romania.

The overall R&D performance of the institute is relatively high, especially given the fact that the GIR core activities, i.e. mapping and other geological services, require a guaranteed and long term contribution from the State. The number of ISI-listed publications is low and measures for the increase of this performance are strongly recommended.

There are still important historical debts which exclude the GIR from the possibility of participating to some significant funds, such as EU Cohesion and Structural funds. Despite this fact, the GIR research teams are involved in a number of important EU-funded projects, such as Thermomap, EuroGeoSource or PanGeo.

The quality of the GIR research staff is generally good. Some of the teams are undersized and others are less productive in terms of scientific publications in prestigious journals. However, these negative effects are a bit attenuated through a good collaboration which exists between different research teams within the GIR. The proportion of administrative staff is at present large but significant recruitment of young researchers has been seriously planned by the GIR management.

The GIR headquarters are characterized by in some parts improper conditions for the foreseen research activity. On the other hand, the overall quality of newly purchased instruments and apparatuses is very good but these facilities should be used in a higher proportion and the monitoring of the exploitation rate is recommended.

There is a recognizable effort done by the GIR leadership in order to improve management efficiency and quality of the research at the institute. The GIR management team should analyze a possible merging of some teams in order to increase the scientific productivity and thereby the number of ISI publications. Schemes to involve young people in projects and team work in a more efficient way should be looked for. There is a clear necessity to organize English training courses for the R&D staff members. The institute has the potential to expand the collaboration and partnership with faculties and research institutes in Romania and this still awaits a full exploitation.

There is a need to refine the development plan in focusing on how to achieve the postulated objectives under present conditions.

## **2) OBSERVATIONS OF EACH EVALUATION TEAM**

### **Team E<sub>1</sub>: MetPetr**

It is a small but well-designed and successful working group led by a high-ranked researcher whose input has already been recognized by the wider scientific community. One of the senior researchers was a Humboldt fellow and they reported 4 invited talks at international conferences.

The main topics of the research groups are metamorphic petrology, geobarometry, thermodynamic modeling, geochronology and geodynamics.

The achievements of the working group are presented by a perspective PhD-student (the panel members have been informed that the working group leader is in field work) and the results are proven to be at a relatively high level. The international cooperation of this research group is quite wide but funding is mainly limited to national sources, such as PN.

The equipment used by this group is in good conditions and the exploitation rate seems to be appropriate. In addition, there is an infrastructural network which makes sure that other working groups can use the equipment belonging to the MetPetr group and vice versa.

## **Team E<sub>2</sub>: GASH-EBD**

This is a group of researchers linked to three projects that are valuable for the GIR in general.

This group is one example that the presented structure of the research teams is not the best one and is neither easy to evaluate.

The presented projects may be relevant to the GIR achievements in the following period, especially for maintaining a high level of international cooperation. However, it is by no means clear that the working group will continue to exist after the termination of the projects.

The evaluators noticed that there is no great wish of the group leader to present the team activities more in detail. There was no information on published papers in journals or conference proceedings.

### **Team E<sub>3</sub>: GIS&database**

It is a very small working team consisting of a single PhD-holder and one PhD-student who possess numerous skills in a wide field of geoinformatics.

The working group covers many activities related to the production of geological and other maps of the GIR.

The team is used mainly as a service for other research groups. In this context, an increase of the staff members of the GIS&database group is recommended. However, their workload is partly balanced by the fact that many team members of other working groups are also involved in performing the tasks of GIS&database team.

The presented research plan of this working group is overambitious especially given the fact that this is a two-staff members group.

## **Team E4: GeoHaz**

The group is dealing with significant issues that have both scientific and societal importance.

The main recent activity of the working group has been related to the landslide hazard assessments and to the production of landslide hazard maps. The group uses a number of methods from geotechnical engineering techniques, geophysical measurements, mineralogical studies, etc.

The group has a vivid international cooperation and is active in having projects including those within the FP7. The international visibility of this research team is apparently high.

The group exists since 1992 and was designed as a distinctively multidisciplinary team with many experts in various disciplines of geological engineering.

The GeoHaz research group has an overall good scientific output. However, the team members had only one ISI-indexed publication in the last several years. It is a typical research group with potential of increasing the number of papers in ISI-listed journals in the future. In this context, the GIR management must undertake some measures in order to increase the awareness of the importance of publishing within this scientifically prosperous group.

## **Team E<sub>5</sub>: Q-Sint**

This is a working team gathered around a specific research project that is indeed valuable for the institute. The team was founded in 2009 and did not exist before.

It consists of three staff members who believe that they will continue to act as a single group after the termination of the project. Though they have not published to the date they foresee economical applications of the team work.

No guarantees about the sustainability of the working team have been demonstrated and merging with other small research teams must be considered.

## **Team E6: RS (Remote Sensing) and GEOMATICS**

This working group has been presented through the implementation of two large-scale projects. The Remote Sensing part apparently had formed long ago and around this core this new group originated.

The team directly engages six people and another six research staff are involved from the other GIR working groups to participate in the presented projects.

For both projects it is allocated around 10% of the whole budget for the GIR working teams. This testifies that the importance of the tasks to be performed by the GIR staff is highly recognized by the consortium. On the other hand, such large shares in the budget are important for the whole institute because of historical debts which severely affect the GIR's potential for acquiring external funds.

Given that the major part of the research team is newly formed, it is quite difficult to assess their scientific performance in the last five years period. This group bears much of the potential to increase the level of international visibility of the institute as well as to increase the number of high-rank publications in future. However, the group leader did not answer in a satisfactory manner the questions raised by some of the members of the evaluation panel.



## **Team E7: PALEONTOLOGY**

One of the major tasks of this research group is to run and maintain the Geology Museum of the GIR. The team has two PhD students out of seven research staff members.

The team members participate to various, mainly national projects. The group in general has a vivid international cooperation but it is mainly established through symposia, some of them organized by this very research team. It is recommended that in future this cooperation should include scientific projects, as well.

The scientific output of the team is above the average for the GIR with three ISI-indexed papers. It is considered good from the panel because it is clear that this group has a great deal of duties other than scientific research, for instance running the Museum, educational activities, short courses and seminars, various dissemination and outreach activities, etc. According to the overall output, this is one of the best teams in GIR.

The group is also responsible for the National Repository of core samples from drillings. It seems that the scientific and societal importance of this task is not entirely clear to the relevant authorities and this problem should be addressed by the GIR management.

## **Team E<sub>8</sub>: GEOECOLAB**

This working group comprises a number of other geochemical facilities, such as, a mobile XRF, AAS, XRD, etc. In addition, the GEOECOLAB also includes a radiometric laboratory, however, the link between the radiometric lab and other units of the working team are not entirely clear.

The equipment available for the working team is fairly young, almost 80% supplied after 2007 and of overall good quality. The older equipment is well maintained and some of the facilities have been appropriately upgraded.

The group is active and committed for doing both basic and applicative scientific research. The results obtained by this group were communicated only via activity reports to the financing authority.

The level of exploiting the existing instruments is not regularly measured.

## **Team E9: GEORESOURCES**

This working group consists of senior researchers exclusively. Given the present level of performance of the whole group (including ISI-listed publications), as well as given the fact that some of the team members are productive researchers highly recognized by the scientific community, it is strongly recommended that this working group should include PhD students in future.

The Georesources working group is appropriately networked with other research teams within the GIR.

The level of funding of this working group is good both at national and international level. The international cooperation performed by this working team valuably contributes to increasing the visibility of the whole institute.

Some of the recent topics of this research team, such as the investigation of the platinum group elements in the igneous rocks in Romania, are of large importance because so far this issue has been known very little.

## **Team E<sub>10</sub>: GeoMag**

This is a branch of the GIR, which is located outside Bucharest. It consists of 14 people out of which 9 are research staff members. The average age of the staff members is below the average for the GIR and the panel member are informed that one R&D position will be filled within one month. The group is almost entirely financed by the national PN funds.

All the staff members are PhD candidates which makes this group a bit unique in the whole structure of the GIR.

The research group is well networked at the European level and they take part to some of the large-scale infrastructural projects, such as EPOS.

The infrastructure of the GeoMag working group is in a good shape.

The scientific contribution of the group is mainly demonstrated through chapters in books and monographs, as well as via organization and preparation of scientific symposia. Two manuscripts are in review in ISI-listed journals. There is indeed a space for increasing the level of ISI-listed publications for this working team in future.

**3) JUSTIFICATION OF THE MARK AWARDED**, for each of the 5 criteria, highlighting strengths and weaknesses, in accordance with the minutes/report of the visit

<b>C<sub>1</sub></b>	<b>The quality of R&amp;D activities and their results</b>	<b>4.0</b>
<p>The publication record of the institute is of an overall good quality but with a rather low number of papers published in journals with non-zero IF (25), which to date collected 63 citations. In addition, there are also books, one edited in a prestigious publisher (Springer) and also an important number of geological and other maps, which belong to the core activities of the institute. Measures for decreasing the misbalance between ISI and non-ISI publications (291 contributions in journals and proceedings) and for increasing the number of publications per capita (presently slightly above 1.5) have to be undertaken in the following period.</p> <p>A number of working groups succeeded to attract significant national and international funds by competition. However, more efforts should be made to increase the share of the private sector in providing external funds. For some EU-funded projects the budget allocated to the GIR groups is relatively high (around 10%), which is a good evidence that the contribution of the GIR teams is considered highly valuable.</p> <p>There are past and present efforts to disseminate information to the large public especially through the activities of the Geology Museum. However, the institute major journal "Romanian Journal of Earth Science" awaits more international visibility. Many research groups, like GeoMag and GeoHaz, are already included within the existing EU networks, and these groups are successfully using these pathways for disseminating their results. Some of the groups regularly use other ways to disseminate their results through radio/TV interviews.</p>		
<b>C<sub>2</sub></b>	<b>Human resources Quality</b>	<b>4.1</b>
<p>The institute possess an overall good quality of human resources at all levels. However, there is a need to recruit young researchers in order to decrease the average age (c.a. 50) and also for supporting/establishing new areas of research. The management plan how to decrease the number of administrative staff is not entirely clear and must be better elaborated. It is obvious that some more pro-active researchers lead teams of higher productivity. Therefore, it is necessary to carry out an internal assessment of the performance of individual teams, which will, first, provide better information about their individual output and, second, show how to attenuate differences in the performance of various research groups.</p> <p>Some of the teams are rather small (between 3 and 6 staff members) and certain merging is recommended.</p> <p>The administrative staff represents a third of the total employed personnel, a fraction which is slightly oversized. The GIR management already undergoes steps in order to cope with this problem and that is considered good.</p>		
<b>C<sub>3</sub></b>	<b>Quality infrastructure and its rate of exploitation</b>	<b>4.1</b>
<p>The institute possesses valuable facilities in particular those required for various geochemical and environmental studies as well as significant geophysical equipments. A great deal of the facilities is fairly young, around 70% being supplied less than 5 years ago. On the other hand, there is a number of quite older equipment which has been well maintained and is still in function.</p> <p>The headquarters of the GIR necessitate a thorough renovation. Some rooms and laboratories inside the main building are improper for a regular research activity. Also the Museum of Geology needs some inherent renovations.</p>		

The installed instruments seem to work properly and at regular basis. However, the representatives of the GIR could not convince the evaluators that newly purchased instruments and apparatuses are used in a high proportion. Therefore, procedures to measure the exploitation rate especially of the new facilities is recommended.

**C4 Management efficiency and quality of the research environment**

**4.7**

The GIR staff seems to be enough motivated to perform high quality research and to put additional effort in gradually improving their R&D output in the following period. The management allows the possibility of additional payments for the staff members taking part in large-scale international projects. The measures for other research performances, for instance, for submitting manuscripts to ISI-listed journals, should be included in future. For instance, the use of awards which already exist in the frame of the Romanian Ministry (e.g. up to 450 Euro for a paper with a single author from Romania) should be encouraged.

The quality of the work performed by the GIR administrative staff is considered good by the research staff, especially by young researchers and PhD students. The electronic signature was recently introduced in the whole GIR and that is especially important for facilitating procurements and other administrative procedures. ISO 9001 standard has already been implemented.

The R&D staff is directly involved in decision making mostly via department meetings and as members of the scientific council of the whole GIR. No infringements of the researcher ethical code were observed.

Several projects are already granted at the EU level and the GIR actively participate to European consortium without large problems in implementation.

**C5 Quality and credibility of the institutional development plan**

**4.1**

The development plan is based on a credible SWOT analysis and has clear objectives. However, the presented plan structure has a much broader character that is more typical for a strategy than for a well focused plan. The management should, therefore, pay more attention on how to achieve the postulated objectives under present conditions.

It is good that the development plan proposes the stimulation of the collaboration and partnership with prestigious institutions and partners from industry. However, there will be no significant improvements before ensuring that the problem of historical debts is solved.

It is strongly recommended that the GIR leadership should employ experts in mathematical modeling of geomechanical or geomagnetic studies as well as to include new research directions, for instance, the use of natural radioactivity for studying sedimentary systems.

The management demonstrates readiness to carry out significant recruitment process in the following period. However, the development plan should propose brain gain activities such as encouraging applications for Marie Curie grants.

The GIR is already a member of important national and international authorities and associations and this provides a base to attract grants and other funds but also for a viable institutional development plan. However, for the core or the GIR activities, such as, for instance, mapping it is necessary to strengthen the relationships between the GIR and the responsible Ministries, i.e. to acquire the recognition as the State Geological Survey.

**Overall technical considerations, observations, conclusions:**

It is of utmost importance to solve the problem of historical debts, at present c.a. one third of the annual turnover, which prevents the GIR of using EU structural and cohesion funds.



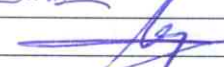
It is also necessary to enhance the cooperation with universities in Romania and abroad in order to facilitate the production of young researchers and PhD students who are needed for the foreseen recruitment. Educational activities of the Geology Museum must be better linked to the ongoing research activities.

The organization of working teams must be restructured and some working groups have to be merged.

The number of publications in prestigious journals should sensitively increase in the following five years.

The renovation of the GIR headquarters is strongly needed.

**Proposed certification level: A (4.2)**

Nr. crt.	Name, Surname	Signature
Evaluation TEAM		
1	Evaluator 1	
2	Evaluator 2 MIȘICU ȘERBAN-VALENTIN	
3	Evaluator 3	
4	Evaluator 4	
5	Evaluator 5	
Observers		
1	Coordinating Authority	
2	CCCDI Representative MEDIANU VICTOR RAȘES	
3	ANCS Representative RAVEA CRIU	

Date: .....

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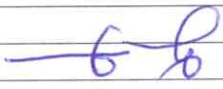
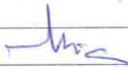

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3	Evaluator 3 COSMA CONSTANTIN	
4	Evaluator 4	
5	Evaluator 5	
Observers		
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2	CCCDI Representative MEDIANU VICTOR PAVES	
3	ANCS Representative RAUVEA CRIV	

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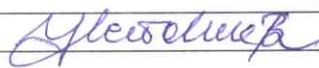
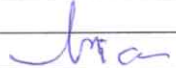

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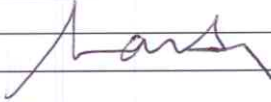
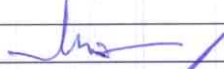

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5	Evaluator 5	
Observers		
1	Coordinating Authority	
2	CCCDI Representative <i>MEDIANU VICTOR RAREZ</i>	
3	ANCS Representative <i>DANEA CRIAN</i>	

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3	Evaluator 3	
4	Evaluator 4	
5	Evaluator 5 MARTIN JEAN-PIERRE	
Observers		
1	Coordinating Authority	
2	CCCDI Representative MEDIANO VICTOR RAEL	
3	ANCS Representative RAUFA OTIN	

Date: 28/07/2012...