

GEO-RECAP

PROJECT FINAL REPORT

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Institutes

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GEO-RECAP Consortium

	GEO-RECAP Partners	Acronym	Country
1	Georgian Technical University (Coordinator) <i>Represented by two Institutes</i>	GTU	Georgia
	Niko Muskhelishvili Institute of Computational Mathematics	GTU-MICM	
	Vladimer Chavchanidze Institute of Cybernetics	GTU-IC	
2	German Research Centre for Artificial Intelligence	DFKI	Germany
3	GIRAF- PM Services GmbH	GIRAF	Germany
4	European Research Consortium for Informatics and Mathematics	ERCIM	France
5	International Centre for Advancement of Research, Technology & Innovation	ICARTI	Georgia

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1. EXECUTIVE SUMMARY

The GEO-RECAP project is an EU FP7 funded INCO project which aims to re-create and build capacities in Georgian ICT Research Institutes. Modernization of research system is one of the most important issues in the country. Though the research institutes have its own profile and are highly specialized in particular research areas, diversification of the scientific fields imply the problems of management, difficulties to create synergies, etc. Mainstream of GEO-RECAP to improve the profile of ICT scientific institutes and to elaborate new funding models, in particular with regard to international programmes and projects is in line with the appropriate reforms in Georgia, where ICT is regarded as a national priority area.

GEO-RECAP consortium includes two leading Georgian ICT research centers GTU-MICM and GTU-IC. They are supported by the European partners DFKI GmbH, GIRAF PM Services GmbH, GEIE ERCIM and the local partner ICARTI, which are distinguished and experienced organizations in their own fields of expertise. By bringing together research teams from ERA and Georgia, GEO-RECAP allows both sides to extend their knowledge and expertise in ICT.

Consortium has achieved its main objectives through the following specific activities:

- Two Networking Events – first organized by ERCIM in Budapest, Hungary, May 2011, another one in Tbilisi, Georgia, organized by GTU and ICARTI in June 2012, including networking, poster and technical sessions
- Two Training Workshops led by GIRAF, both conducted in Tbilisi, June 2011 and October 2012, comprising science-related and actual EU project training materials
- Coaching Scheme, supported by the Mobility Scheme, which allowed Georgian researchers to meet and work with European partners
- Strategy Development, led by DFKI, based on the conducted SWOT analysis in GTU-MICM and GTU-IC
- Dissemination of project results via the Project Website and other dissemination channels, led by GTU and ICARTI

Report below describes GEO-RECAP activities during its two years in details, highlights significant results and achievements of the project and presents the list of generated Exploitable Foreground.

2. PROJECT CONTEXT AND THE MAIN OBJECTIVES

Up to recently Georgia's research system comprised 7 public universities and more than 60 research institutes. Research was carried out at the research institutes and at the universities. Universities additionally fulfilled the education and training function. The research institutes were established as legal entities of public law, each with its own profile and highly specialized in a particular research area. Diversifications of the scientific fields at the institutes implied the problems of management. Moreover, it was very difficult for each individual institute to generate a significant impact on national, regional, or European and International level. Due to the conducted reforms, in the beginning of 2011 most of the research institutes joined the State Universities. According to this process MICM and IC merged to the Georgian Technical University (GTU), as independent structural units (ICT cluster).

As part of the continuing reform of the research system, Georgia tries not only to improve the number and profile of its scientific research institutions but also to elaborate new funding models in particular with regard to international programmes and projects. Hereby, the area of information and communication technologies (ICT) is considered the national priority area. Thus, supporting research in ICT will imply significant positive socio-economic effects and positive impacts.

Due to the trend of consolidation and reorganization and an important role of ICT, GEO-RECAP consortium includes two leading Georgian research centers in this area - GTU-MICM and GTU-IC. Georgian researchers are supported by the European partners DFKI GmbH, GIRAF PM Services GmbH, GEIE ERCIM and the local partner ICARTI, which are distinguished and experienced organizations in their own fields of expertise such as: innovative software technologies, Informatics and Mathematics, training and consultancy etc. According to its central goal to initiate and increase scientific cooperation between the ERA and both GTU-MICM and GTU-IC, GEO-RECAP will systematically support Georgian institutes in the venture to enhance the cooperation capacities. The impact of the project on the Georgian ICT research community will be maximized as both centers will act as trend-setters with regard to international research cooperation. The strategy, developed within GEO-RECAP directly contributes to the ongoing and wanted general reorganization.

Considering that ICT is of central importance both to ERA and Georgia and that through GTU-MICM and GTU-IC Georgia offers leading ICT centers, GEO-RECAP will not only be beneficial to Georgia, but also to ERA: By bringing together research teams from ERA and Georgia, GEO-RECAP allows both sides to extend their knowledge and expertise in ICT, to minimize costs (through cooperation and collaboration) and to maximize outputs of the research activities.

Overall, GEO-RECAP will implement a set of focused activities – networking, training and coaching, strategy development – in order to build and maximize the cooperation capacities of the Georgian research centers. Exceptionally, GEO-RECAP will be designed as a practical “training-on-the job” and supported “learning-by-doing” action that will empower the Georgian research centers and allow them not only to learn but

also put into practice everything that is relevant to sustaining and actively integrating themselves into the international research community. In all their tasks, they will be guided, advised and directly supported by the respective European expert(s) and the local partner ICARTI. Project pursues the following specific objectives:

Objective O. 1: To conduct two networking events – one in Georgia and one in ERA. The events enable exchange and partnering between Georgian researchers and their matching European counterparts. DFKI's and ERCIM' contacts and dissemination channels ensure the recruitment of best and most relevant top-level European experts. The main selection criteria are (i) research expertise that matches the research capacities and interests of GTU-MICM and GTU-IC, and (ii) capacity and experience to initiate a joint project. Networking events include: networking session, poster session, technical session.

Objective O.2: To conduct two training workshops and to design the coaching scheme for Georgian researchers. The training workshops comprise science-related training to raise awareness among the participating Georgian researchers on EU ICT priority research areas and cooperative opportunities in FP7. They also include actual EU project training. The coaching scheme will allow a number of Georgian researchers to meet and directly work with suitable European partners for actual practice and implementation of joint projects. Basis for the mobility of researchers is a mobility scheme. Each mobility grant is intended to contribute to travel and subsistence costs for one participant of the networking event or the coaching scheme. The scheme includes an online submission tool on the project website. Evaluation and allocation of grants is done by the project steering committee.

Objective O.3: Development of a sustainable strategy to increase the research centre's regional coverage and to improve its response to the existing socio-economic conditions. Objective is based on the conduct of a SWOT analysis. The strategy will give clear recommendations as to how the institutes can change their structures with regard to links with other institutes/universities, innovation and links with industry. The required information will be obtained through interviews with GTU-MICM and GTU-IC directors, heads of departments and leaders of research groups. Based on the outcomes of this analysis, a corresponding strategy will be suggested to the Georgian research centers. The details of the SWOT analysis as well as the development strategy will be formally laid down in the Strategy papers.

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3. DESCRIPTION OF THE MAIN S & T RESULTS/FOREGROUNDS

WP1 – Networking

Start month – 4; End month – 17. Leading beneficiary – GTU

Task 1.1: Preparation and conduct of 1st Networking Event (D1.1)

Due to the decision of PCC at the Kick off Meeting of the project the 2nd Networking Event in ERA was regrouped with the 1st Networking Event in Georgia and was held in Budapest, Hungary, in parallel with European Future Technologies Conference and Exhibition 2011 (fet 11), 4-6 May.

The reason for regrouping: *contacts between Georgian and European scientists would be established and it would be good prerequisite for the next networking event to be held in Tbilisi.*

On March 1, 2011 GEO-RECAP announced the call for Mobility Grants to support the researchers of GTU-MICM and GTU-IC to participate in the event and *fet 11* conference. Georgian delegation included 15 members. ERCIM supported Georgian participants to obtain favorable registration fees, the hotel reservations and invitation letters; made an announcement on *fet 11* page for “Satellite Events”; sent the invitation letters to ERCIM's mailing list; prepared the Project flyers.

Event was composed of the Networking and Poster Sessions:

The Networking Session was attended by 35-45 persons and included a brief presentation of researchers from GTU-MICM, GTU-IC and EU. ERCIM presented newly announced AISBL model.

Poster Session was moderated by Mr. Keith Jeffery and Mr. Pierre Guisset (ERCIM). 7 posters were designed and published for this purpose (one of the posters was exhibited on the *fet 11* conference). They were reviewed and discussed in order to prepare the implementation of the mobility and coaching schemes.

Conclusion

The European Future Technologies Conference and Exhibition 2011 was co-organized by the European Commission, ERCIM and the Hungarian Academy of Sciences, under the auspices of the Hungarian Presidency of the European Union. The European atmosphere, multi-disciplinary context and mix between technical and theoretical topics provided the foundation for partnering and exchange between Georgian and European researchers. Both the networking session and *fet 11* facilitated the integration of Georgian participants into the event both in terms of logistics and visibility. Georgian researchers: had an opportunity to take an early look at tomorrow's science successes and technologies based on ICT-led research; attended 28 different exhibitions; integrated and built relationships with European research communities including scientists and policy makers (e.g. GTU-MICM and GTU-IC became the members of IDGF – International Desktop Grid Federation, <http://desktopgridfederation.org>).

Publication of the 1st Networking Event

- Aside from the GEO-RECAP website the announcement was made on *fet 11* page for “Satellite Events” as well (see <http://www.fet11.eu/about/satellite-events>). GEO-RECAP was the only EU-funded project outside of the Future and Emerging Technology Units to be accepted on-site.
- Invitation letters were made and sent to ERCIM's mailing list (reaching researchers in

more than 20 ERCIM affiliated institutes, including the Board of Directors, Executive Committee, Working Groups, and Fellows).

- Project flyers were prepared and put at the *fet 11* registration desk, ERCIM's display booth, and the Science Lounge to introduce the GEO-RECAP project. Additionally, Georgian participants delivered the flyers on-site during the conference.
- "Supporting Georgia in Enhancing the Cooperation Capacities of its ICT Research Centers" (ERCIM News, #84, January, 2011, pg. 9; <http://ercim-news.ercim.eu/images/stories/EN84/EN84-web.pdf>)

Task 1.2: Preparation and conduct of 2nd Networking Event (D1.2).

2nd Networking Event was held in Tbilisi, Georgia, at the Meeting Room of the Georgian Technical University (GTU), 27 - 28 June, 2012. Event was organized by GTU-MICM, GTU-IC and ICARTI. Networking was conducted together with the EC funded **Ideal-ist** (<http://www.ideal-ist.eu>) project twinning meeting, which was organized by the EC ICT NCP in Georgia (head of ICARTI). Organization of the joint event was mutually profitable for both projects. The aim of GEO-RECAP project was networking and, thereby invitation of European ICT experts was very important. On the other hand, Twinning of NCPs in the frame of Ideal-ist project, together with additional participants and experts in ICT, was important as well. Overall Event was attended by 31 persons including 9 foreign guests from 5 countries.

The Deputy Rector of GTU and the representative of the Rustaveli National Science Foundation (RNSF) in the opening words expressed readiness on behalf of their organizations to support the integration process of Georgian research institutions to ERA. The coordinator of GEO-RECAP talked about the main features of the implementation of the project and the role of GTU as a coordinator organization, presented success stories of Georgian researchers and future plans. Dr. Pierre Guisset presented ERCIM as European cooperation instrument for excellence in ICT research and its role and activities in the GEO-RECAP project. Dr. Givi Kochoradze presented ICARTI and talked about its role and dissemination activities in the project, discussed and suggested ideas regarding the new research proposals, networking sessions etc. Professors Alex Grishin and Hans Bergqvist presented Royal Institute of technology (KTH, Sweden) as a centre of excellence in technologies and highlighted scientific success of the institute in the fields of ICT and material sciences. Dr. Ramaz Kvatadze, the head of Georgian research and educational networking organization GRENA, spoke about the development of E-Infrastructure at schools in South Caucasus countries and other related projects. NCPs from Ukraine, Moldova and Azerbaijan presented NCP activities and initiated the discussion regarding ICT policies in presented countries.

The second day started with the brief review of the draft Strategy Papers (WP 4). It was moderated by the Senior Consultant of ERCIM, Dr. Pierre Guisset. The next part of the event included the demonstrations of future research proposals of Georgian researchers for FP7 upcoming calls (ICT Call 10, 11). In all 8 proposals were presented in various fields of ICT and its applications. Each presentation was followed by the questions, discussion and advices.

Conclusion

The Networking Event was extremely important for the Georgian researchers. It raised awareness about the ICT policy in the European and neighboring countries. It gave opportunity to get an insight of the state of arts in the advanced European technological research centers, to present their current research interests and achievements as to the International audience, to interact with and to receive valuable advices from the European participants, to establish direct contacts with the European colleagues, to enhance effectiveness and benefits for the Georgian research centers to integrate to the European Research Community through the FP7 or/and other programs (see the details at project website).

Publication of the networking event

- Announcement about the Networking Event appeared on the GEO-RECAP project website in June, 2012. Invitation letters were sent to the participants
- All the presentations and related material (Agenda, list of participants, photos etc.) are available on the project website
- Information (in Georgian) about the Event can be viewed on the websites of GTU <http://news.gtu.ge/index.php?newsid=1887>, the websites of GTU-MICM and GTU-IC (<http://www.compmath.ge>, <http://www.cybernet.ge/>) and of GHN News Agency <http://ghn.ge/news-70064.html>
- G. Giorgobiani, G. Kochoradze. Cooperation with Georgia's ICT Research Centers: The Second GEO-RECAP Networking Event. ERCIM News #91, October, 2012, pg. 4 <http://ercim-news.ercim.eu/images/stories/EN91/EN91-web.pdf>
- Special flyers and invitations were also prepared (see the project website)

WP2 – Training and Coaching

Start month – 4; End month – 24. Leading beneficiary – GIRAF

Task 2.1: Preparation and conduct of the 1st Training Event (D2.1):

Due to the decision of PCC at the Kick off Meeting the date of first Training Event was moved forward and it was held in Tbilisi, GTU, 18-19 June, 2011 (cf. with delivery date by Annex 1 – month 12). The reason for moving forward: Georgian researchers would receive training on time for the ICT Call in autumn 2011.

The 1st Training Event was held in Tbilisi, GTU, 18-19 June, 2011. The preparations started right after the return of the Georgian team from Budapest. The responsible for this Event was GIRAF PM Services GmbH. In the beginning of June the agenda and other details were agreed. 21 participants for the 1st Training Event were selected by GTU-MICM and GTU-IC based on (i) their research expertise and (ii) on the relevance of their research to the upcoming FP7 calls (in particular ICT).

In May, 18 research proposals generated by the Georgian scientists from GTU-IC and GTU-MICM were sent to GIRAF PM for evaluation. Each proposal was individually analyzed in terms of its scientific contents. Then, potential funding schemes (in particular in FP7) were checked and suitable open funding opportunities were suggested. In case where no direct funding opportunity could be identified, clear recommendations were prepared as to how to re-shape the content of the proposal so it might fit into a funding scheme. Moreover, the competences of the particular

scientist/department were taken into account to identify additional opportunities for collaboration with EU scientists. Like this, direct contact details of suitable European partners were forwarded.

Overall, the GEO-RECAP training workshop in June comprised science-related theoretical training to raise the awareness among the participating Georgian researchers on existing EU ICT priority research areas and cooperative opportunities in FP7. In addition, the workshop included actual EU project training (here: how to find the right funding opportunity, how to write a successful proposal, how to find partners etc.). The training event included the following basic modules:

Theoretical training:

- How to identify funding opportunities, in particular in FP7
- How to shape a project idea
- How to write a proposal (in particular Part B)
- How to find partners
- Overview of Evaluation and Submission Process
- Basics of Financial Regime in FP7

Practical Training:

- Presentation of individual research ideas/proposals by Georgian scientists
- Identification of funding opportunities
- Evaluation of proposal with recommendations for change and mediation of partners

Overall 21 Georgian researchers received theoretical training and relevant **practical exercises** based on real successful projects and the upcoming ICT and other calls.

Conclusions

As a result of the 1st GEO-RECAP training event, participants gained a first insight into funding opportunities for research relevant to their particular research interests; learnt how to find European partners relevant to their area of expertise; got an insight into the steps and challenges involved in proposal writing; received relevant illustration materials of how to write different parts of a research proposal. The proposals of all participants were evaluated. For each proposal, potential funding opportunities were identified. Recommendations were given as to how to approach the opportunities, how to adapt the content of the proposal etc.

Task 2.1: Preparation and conduct of the 2nd training event (D2.2)

2nd training event was conducted at GTU in Tbilisi (Georgia), on 15-16 October, 2012. The objectives of the training were to raise awareness on EU ICT priority research areas and cooperative opportunities in FP7 among Georgian researchers; to theoretically and practically build the required capacities of the Georgian researchers for participation in joint research projects (in particular FP7). Overall 16 Georgian researchers participated in the Event.

GEO-RECAP training workshop comprised science-related theoretical training to raise the awareness among the participating Georgian researchers on existing EU ICT priority research areas and cooperative opportunities in FP7/Horizon 2020. In addition, the workshop included a practical feedback session and evaluation of research proposals of participants. All participants had prepared their proposal ideas for the upcoming ICT calls and submitted them to the trainers 4 weeks prior to the event to be evaluated in detail and placements for proposals could be sorted out. Participating researchers got direct feedback on their proposals (including suggestions for improvements and, where needed, suggestions for European partners). The agenda and contents covered by the 2nd training workshop were:

- New funding opportunities in the ICT Work Programme 2013
 - Challenge 2: Cognitive Systems and Robotics
 - Challenge 3: Alternative Paths to Components and Systems
 - Challenge 7: ICT for the Enterprise and Manufacturing
- Partner search and identification for potential projects (including also channels available at ERCIM to join proposal teams for Calls 10 and 11)
- Funding opportunities for Georgian researchers within Marie Curie (FP7/Horizon 2020)
 - International Incoming Fellowships
 - International Outgoing Fellowships
 - Focus, proposal writing and application procedure
- Horizon 2020 & “Funding Wrap-up”
 - Outlook: Horizon 2020 – contents and focus
 - Funding wrap-up: Submission procedures (what’s new?), reporting, IPR

Conclusion

As a result of the 2nd GEO-RECAP training event, participants gained a first insight into upcoming funding opportunities for research relevant to their particular research interests, namely in the current ICT calls and in future Marie Curie actions. Corresponding partner search for different research ideas were presented along with ways and channels to find additional partners; the proposals of all participants were evaluated and feedback was given; an outlook was given as to the shape and funding opportunities in Horizon 2020.

Task 2.2: Set-up and implementation of a Coaching Scheme (D2.3):

During the 1st Training Event the plan of implementation of a coaching scheme was discussed. It was decided: to select most promising project proposals among of those 18, which were evaluated and send them to ERCIM. Further ERCIM, in collaboration with its members will facilitate Georgian organizations to be involved in FP7 ICT projects.

In June – August, 2011, Coaching Scheme was set up, including the Online Grant submission system (D3.1):

- Grant Application Forms were pre-processed; links with specific objectives of the ICT Work Programme 2011-2012 and future calls were clarified

- Short visit scheme was defined:
 - Visits are typically of 2-3 days duration, i.e. max 1 week including travel time (though there may be exceptions depending on the project proposal)
 - Expenses of Georgian researchers are supported by GEO-RECAP budget (average 1200 EUR/visit, covering travel, accommodation and living expenses).

In the end of October, 2011, 15 project proposals were selected and sent to ERCIM mailing lists. The Call was published on the Project Website and in the ERCIM News N° 87.

Aside from the one part of the scheme, based on the ERCIM channels there also existed other opportunities, like personal, existing contacts of Georgian researchers with European colleagues (e.g. Calabria and Zaragoza Universities), project partners DFKI, GIRAF and ICARTI and newly established contacts during the project implementation period (e.g. Saarland University, Companies – APRE (Italy), Steinbeis Europa-Zentrum (Germany), MUFICATA (Spain) etc.).

Overall 14 researchers participated in the Coaching Scheme, which allowed them to meet and directly work with suitable European partners for actual practice and implementation of joint-projects:

1. Participation in **fet 11 conference** and the **1st Networking Event of GEO-RECAP**, 04-06, May, 2011, Budapest, Hungary. Recipient of the **mobility grants** for coaching and capacity building were the following researchers of GTU-MICM and GTU-IC: D. Jishiaishvili, A. Chanishvili, G. Ghlonti, H. Meladze, E. Turkia, Z. Sanikidze. Two professors, the head of Science department and the head of Quality Assurance department of GTU, and the Head of Rustaveli National Science Foundation and his assistant were also supported with the **mobility grants** as policy makers and key note speakers.
2. Two study visits to the **Department of Optics & Photonics, Liquid Crystal Laboratory (LiCryL), Calabria University**, Italy, July, 2012. Recipient of the **mobility grants** for coaching were G. Petriashvili and B. Kilosanidze (GTU-IC). The purpose of the visit was to exploit GTU-IC's experience to investigate those related topics and to identify whether their knowledge is up-to-date. In addition, a discussion with Italian partners was sought to prepare first stage of scientific concept for FP7 and involve international scientists who hold close interaction and long-term collaboration with LiCryL staff, such as: University of Zaragoza (Spain), l'Institut des NanoSciences de Paris (France).
3. Study visit to **UBIFRANCE and ERCIM**, France, 24th of September – 1st of October 2011. Recipients of **mobility grants** for coaching were G. Giorgobiani, Z. Sanikidze (GTU-MICM), T. Sulaberidze, G. Mumladze (GTU-IC).
4. Study visit to **DFKI and Saarland University**, Germany. Prof. Ekatarina Turkia (GTU) was forwarded to take up and increase collaboration with Saarbrücken's higher education and research institutions (namely: DFKI - Prof. Loos and the University of Saarland - Prof. Paul, and the Technical University of Saarbrücken).
5. Study visit to the **Centre for eLearning Technologies (CeLTech) of DFKI**, 4–5 of November, 2011 in Saarbrücken, Germany. G. Mumladze, G. Giorgobiani, Z.

- Sanikidze and G. Kochoradze (ICARTI) used travel budget. Dr. R. Kvatadze (Executive Director of Georgian Research and Education Networking Association GRENA, <http://www.grena.ge/>) received **mobility grant** in his position as policy maker and key note speaker and was included in the delegation.
6. Study visit to **DFKI and GIRAF**, Germany, 22nd – 26th of April 2012 in DFKI Saarbrücken. Recipients of **mobility grants** were G. Giorgobiani, Z. Sanikidze, T. Sulaberidze, G. Mumladze, R. Grigolia, and Z. Tabagari.
 7. Study visit to **Zaragoza University**, Spain. Dr. Barbara Kilosanidze, Head of the Laboratory of Holographic Recording and Processing of Information of GTU-IC was recipient of this **mobility grant**.
 8. Rome, Italy, 25-29 of September, 2012
 - **ICECECE 2012** Conference (organized by the World Academy of Science, Engineering and Technology WASET), Recipients of the **mobility grants** were the group of scientists who jointly worked on the project on the ICT-based election management system: Z. Tabagari, G. Giorgobiani, Z. Sanikidze, (GTU-MICM), and G. Mumladze (GTU-IC).
 - Visit to **company APRE**. G. Giorgobiani, Z. Sanikidze, G. Mumladze and G. Kochoradze visited the office of the company.
 9. Visit to **ICT Proposers' Day 2012**, 25-26 of September, 2012, in Warsaw (Poland) and subsequent visit to Rome, Italy. Dr. Givi Kochoradze was supported by the GEO-RECAP project **mobility grant** and to attend the ICT Proposer's Day 2012 in Warsaw and join the group of Georgian researchers in Rome to attend the conference and lead the visit to company APRE.
 10. Visit to Stuttgart, Germany, 26 October Dr. Givi Kochoradze and Dr. George Giorgobiani visited **Steinbeis Europa - Zentrum** to discuss the details of Work Packages of new consortium in the Call FP7-INCO-2013-9 - Reinforcing cooperation with European Neighborhood Policy countries on bridging the gap between research and innovation (R2I – ENP).

Outcomes:

- Submitted 1 TEMPUS proposal (TEMPUS IV - 5th Call for Proposals)
- Submitted 3 research FP7 proposal (FP7-INCO-2013-9)
- Prepared 1 research FP7 proposal (FP7-ICT-2013-11; ICT-2013.3.2 Photonics)
- 2 proposals for the Alain Bensoussan Fellowship Programme (ERCIM)
- Signature of collaboration agreements GTU – HTW, GTU- UDS, TSU-UDS
- Joint research project between DFKI's IWI and GTU.
- Grant for Training at Zaragoza University, Spain: The Program of Governmental Scientific Grants for Young Scientists – Research Training in World Scientific Centers.
- 5 Georgian researchers attended International Conference in Rome (ICECECE 2012).

(Please view the details below in the summary of significant results)

In addition to the scientific outcomes, the GEO-RECAP has managed to get GTU-MICM's and GTU-IC's management and research administrators acquainted with the

proceedings of FP7 (tools and methods for acquisition of research projects), regulations of EU project management, financial management within European-style research organizations and universities, and the organization of technology transfer and innovation (including facilitation of relevant academic and industrial contacts and partners in Europe). Georgian scientists were trained (both practically and theoretically) on how to write proposals for European funding bodies, in particular FP7.

WP3 – Mobility

Start month – 1; End month – 24. Leading beneficiary – GTU

Task 3.1: Set-up of and implementation of a Mobility Scheme. Due to the inclusion of a mobility scheme in the project the travel costs are about 14,2% of the total budget. This comprises as mobility grants (about 25 travels) allocated in the GTU-MICM budget, also costs for travel for each partner organization, estimated on the number of networking and training events, project meetings that the partners have to participate, any relevant additional travel activities linked to the dissemination, promotion and liaisons building of the project activities and results.

The **Mobility Scheme** was already active in March, 2011, and was applied first in May to the mobility of researchers to attend the First Networking Event and *fet 11* Conference in Budapest (see WP 1). For this purpose Online Grant Submission System was designed (see D3.1):

- Call was announced on the project website
- Guide for applicants was created and published
- Online submission tool was implemented.

The similar system has been applied in the end of October, 2011, when, as mentioned above, 15 most promising project proposals were selected and sent to ERCIM mailing lists (see Call for Mobility Grants on the Project Website).

Task 3.2: Evaluation of grant applications & allocation of grants. After the termination of online submission, independent experts evaluate the Grant Applications of the call participants. The winners are awarded the mobility grants.

Overall, during the two years of GEO-RECAP project implementation 14 Georgian scientists have been supported with 25 Mobility Grants (see above Task 2.2).

As for the other travels, overall there were organized 27 trips of the consortium partners to attend the Kick Off and Final Meetings, Networking and Training Events and other project meetings.

WP4 – Strategy development

Start month – 2, End month – 24. Leading beneficiary– DFKI

Task 4.1: Set-up and organization of the strategy working group

The strategy working group of GEO-RECAP was set-up in May 2011 and included the following members:

- GTU-MICM: Dr. George Giorgobiani – coordinator of the project (scientific secretary of GTU-MICM), and Dr. Zaza Sanikidze - scientific representative of the coordinator of the project (deputy director of GTU-MICM)
- GTU-IC: Dr. Giorgi Mumladze – coordinator contact (secretary of scientific board of GTU-IC)
- DFKI: Prof. Dr. Jörg Siekmann (Scientific Director of DFKI GmbH, Director of Centre for e-Learning Technology, Professor at Saarland University, Co-president of the international federation on computational logic (IFCOLOG), Chairman of the collaborative research centre „Resource-adaptive Cognitive Processes“, Chairman of the Network of Excellence on Computational Logic (COLOGNET)) and Dr. Andrey Girenko (CeLTech Executive Board Member responsible for Projects / Funding / Controlling)
- ICARTI: Dr. Givi Kochoradze (Executive Director of ICARTI)

In terms of distribution of tasks and responsibilities, the strategy working group is organized as follows:

- Methodological framework and lead: DFKI
- Provision of best practice examples from ERA: DFKI
- Data collection from experts within GTU-MICM and GTU-IC
- Data collection and best practice examples from policy level experts: ICARTI

The strategy working group had 4 meetings to discuss open issues, clarify and plan the tasks, and for decision-making. In between face-to-face meetings, work was conducted through web and phone conferences as well as email for exchange of data and materials. The working group meetings were collocated with other ongoing GEO-RECAP events (see e.g. WP3, visits and events WP1,WP2) to minimize costs and efforts.

For starting the group's activities, in particular the preparation and conduct of the SWOT analysis (see Task 4.2), the strategy working group kick-off meeting was scheduled for June 2011 – the meeting was held in coherence with GEO-RECAP's first training event.

Task 4.2: Preparation & conduct of SWOT analysis

Regarding task 4.2, the kick-off meeting for the strategy working group took place in June 2011. The meeting comprised a clarification of the purpose of the work package and the purpose of the organizational analysis, i.e.

- To help GTU-MICM and GTU-IC find their way into the European Research Area – not just short-term, but in the long term.
- To identify what can be done organizationally and from a structural point of view to support this goal.

The preparations for SWOT analysis started in May, 2011. The main task for that period was the definition of relevant sources of information as well as the collection of information and invitation of relevant experts (namely: the president of GTU, the director of GTU-MICM, the director of GTU-IC as well as the financial administrators and scientific officers of GTU-MICM and GTU-IC). Presentations were given by the GTU president as well as the representatives of GTU-MICM and GTU-IC regarding:

- The organizational structure of their institutes / the university
- The status and content of existing reforms on university level
- The status of integration and links with other national, regional and international players in ICT.

ICARTI provided an in-depth analysis of the status of reforms on national/political level in Georgia regarding the re-organization of the Georgian science system. This also included an outlook for upcoming and expected changes. Overall, particular focus was given to the understanding of existing changes within GTU-MICM and GTU-IC and the changed environment both institutes have to operate in because of the ongoing reforms (2005, 2006, and most recently 2011 merger with GTU, changed sources of funding, reduction of governmental budgetary support etc.).

DFKI, in particular represented by Prof. Jörg Siekmann, gave a detailed insight into DFKI organizational structure, its financing system, as well as on the integration of DFKI in the European Research Area and organizational strategy (also, regarding in particular acquisition strategy of both industry-based projects and publicly funded projects, integration with key partners). In detail, presented by Dr. Andrey Girenko, the work of the financial department was explained. Moreover, the most common financial issues faced by DFKI (namely: opportunities for funding, diversity of cost-based funding sources, co-funding issue, planning of costs across different funding schemes etc.), were presented and discussed in detail along with the corresponding organizational contingency strategies. All the presentations and interviews were followed by question and answer session. The further **working plan** for the strategy working group was agreed and implemented:

- Collection of information for SWOT analysis
- Partially by email and phone, if possible even face-to-face
- Input required from management, scientific leaders and administrative/financial personnel
- First draft of SWOT analysis outcome: December 2011
- Final draft: End of February 2012
- Important: The methodology used (e.g. surveys, interview partners etc.) must be documented in the deliverable/document!
- Drawing up of Strategic Development Agenda
- Start: March 2012 / First draft: June 2012 / Final draft: October 2012.

At the project meeting in Saarbrücken, April 2012, Dr. Andrea Loesch presented the draft papers of SWOT Analysis. On its basis the Questioner was designed for the interviews with key personnel of GTU-MICM and GTU-IC, directors, heads of departments, leaders of research groups etc:

Questioner	
Strengths	<ol style="list-style-type: none"> 1. Areas of scientific excellence (economic potential / potential to market) 2. Existing complementary expertise (e.g. fund raising abilities; foreign language proficiency) 3. Existing research collaborations (regional, national and international) 4. Sources of funding
Weaknesses	<ol style="list-style-type: none"> 1. Sub-optimal research / research areas that need improving / re-focussing 2. Areas / departments with financial difficulties / lack of funding 3. Areas / departments with sub-optimal complementary expertise (e.g. foreign language proficiency, lack of research collaboration, lack of integration etc.) 4. Bottlenecks / inefficiencies in organisational structure
Opportunities	<ol style="list-style-type: none"> 1. Specific additional funding opportunities (regional, national and international) 2. Suitable opportunities for future research collaborations (regional, national and international) 3. Suitable research partners (regional, national and international); if necessary also partners to provide missing complementary expertise.
Threats	<ol style="list-style-type: none"> 1. Relevant socio-economic and political developments (regional, national, international) 2. Financial issues and external development 3. National research priorities and structure.

Task 4.3: Creation of the Strategy Papers (D4.1, D4.2). On the basis of these interviews and the analysis of collected material the strengths, weaknesses, opportunities and threats were identified.

Information collected through SWOT analysis was evaluated and analyzed for the preparation of the strategic documents (“GTU-MICM strategic development agenda” and “GTU-IC strategic development agenda”). After internal and external reviews the White Paper was published on the project website; corresponding brochures (hardcopies) were published and distributed to the administrations and libraries of GUT-MICM, GTU-IC and GTU, etc.

Summary of significant S&T results

- I. Georgian researchers had opportunity to meet European colleagues, integrate and build relationships with European research communities; Received theoretical training and relevant practical exercises on existing EU ICT priority research areas, cooperative opportunities in FP7 and EU project training. Moreover, these activities, combined with intensive practical Coaching generated new Scientific Project Proposals and Future Research Collaboration Initiatives:

1. Submitted 1 TEMPUS proposal

TEMPUS IV - 5th Call for Proposals.

Project title: Modernization of Mathematics and Statistics curricula for Engineering and Natural Sciences studies in South Caucasus Universities by introducing modern educational technologies

Consortium: On the Georgian side GTU and GRENA; Project partners on the European side were University of Saarland, Tampere University of Technology and the Research Institute for Mathematics of the Université Claude Bernard Lyon 1.

Outcome: The proposal was submitted on 23rd of February 2012. It was categorized in group II (proposals of good quality, score between 50 and 69,5 out of 100), but was not retained for funding.

2. Submitted research FP7 proposal:

Call identifier:FP7-INCO-2013-9;

Project title: „Knowledge Transfer Community to bridge the gap between research, innovation and business creation - NoGAP”.

Consortium: Steinbeis Innovation GmbH, GTU, ICARTI and others (12 partners).

Submitted on 18.12.2012

3. Submitted research FP7 proposal:

Call identifier:FP7-INCO-2013-9;

Project title: „Reinforcing Cooperation with ENP (Ukraine and Georgia) to bridge the gap between research and innovation and industry needs to combat the societal challenge of climate actions, resource efficiency and raw materials supply” (INNOEASTBRIDGE)

Consortium: Alicante and Coventry Universities, GIRAF, GTU, ICARTI and others (11 partners).

Submitted on 18.12.2012

4. Submitted research FP7 proposal:

Call identifier:FP7-INCO-2013-9;

Project title: Eastern Neighbourhood R2I Capacity Building Platform in the field of Environment Monitoring and Observation (ENMO);

Consortium: GIRAF, EARSC, ARATOS, UAGF, GTU, ICARTI and others (9 partners).

Submitted on 18.12.2012

5. Prepared research FP7 proposal:

Call identifier: FP7-ICT-2013-11; Challenge 3: Alternative Paths to Components and Systems; Objective: ICT-2013.3.2 Photonics.

Project title: “Development of an innovative real-time imaging sensor of the polarization state of light based on the integral polarization-holographic diffraction element”.

Consortium: Calabria University, Zaragoza University, GTU-IC (Laboratory of Holographic Recording and Processing of Information). Negotiations continue with the Laboratory of chemical transformations of polymers, Moscow State University.

6. 2 proposals for the Alain Bensoussan Fellowship Programme (ERCIM)

- R. Kurdiani, GTU-IC; Call in autumn 2011; subject – computer algebra (rejected)
- G. Ghlonti, GTU-MICM; Call in autumn 2012; subject – unified information space and analytical capabilities for a socio-economic environment (not evaluated yet)

7. Signature of collaboration agreements between GTU – HTW, GTU- UDS, TSU- UDS

8. Joint research project between DFKI, IWI (Prof. Loos) & GTU (Prof. E. Turkia)

9. Grant # YS/38/6-210/12 for Training at Zaragoza University, Spain: The Program of Governmental Scientific Grants for Young Scientists: Research Training in World Scientific Centres. Beneficiary: I. Chaganava (GTU-IC). Title: The synthesis and study of high-efficiency polarization sensitive materials of a new type

II. Mobility Scheme allowed Georgian researchers to attend International Conferences:

1. **Budapest – fet 11** (15 researchers)
2. **Rome – ICECECE 2012** (5 researchers)

III. Georgian members of GEO-RECAP have gained experience from European colleagues with regard to the project management and coordination. In fact, within the frames of GEO-RECAP, long since it was a first SWOT analysis conducted in GTU-MICM and GTU-IC, which enabled to detect the strengths and weaknesses, opportunities and threads for these research institutes and to define future strategy development policy:

1. **SWOT Analysis** – conducted in GTU-MICM and GTU-IC.
2. **White Paper** – “Strategic Development Agenda for GTU-MICM” & “Strategic Development Agenda for GTU-IC”.

These important documents are beneficial not for only GTU-MICM and GTU-IC, but also for other research institutes in Georgia.

IV. Other main achievements of the GEO-RECAP project, regarding the acquired knowledge and experience can be listed as follows:

1. Researchers of GTU-MICM and GTU-IC are now well educated in EC funding opportunities and programs, such as FP7, STCU, ISTC, IFS, DFG etc.
2. They received experience in preparation of financial forms, economical calculations etc. Georgian scientists established contacts with European

scientists/specialists and they will continue the established cooperation after the completion of the project.

3. United in ICT cluster of GTU, both institutes became more oriented and concentrated on ICT tasks.
4. Georgian scientists received enough knowledge and education for working and collaborating independently with European programs and partners.

4. POTENTIAL IMPACT, MAIN DISSEMINATION ACTIVITIES AND THE EXPLOITATION OF RESULTS

4.1 Potential impact of the project

According to its objectives the GEO-RECAP project's expected final results and their potential impact in the target country are: Contribution to RTD capacity building; Enhanced participation in the 7th Framework Programme; Increased scope of the research centers, linkage with economic and social environment; Networking with other research centers in Member States or Associated Countries; Increased opportunities and perspectives for young Georgian scientists.

Two Networking Events and two Training Workshops, conducted during the GEO-RECAP project implementation, being itself the scientific and societal benefit for the participant researchers, have also prepared the ground for future scientific and socio-economic development of Georgian ICT research community. During these two years Georgian researchers have established and enhanced contacts with 4 European Universities, several ICT (and other) companies and other FP7 projects in Member States and Associated Countries.

According to the integration process with European research communities and received training on existing EU ICT priority research areas and cooperative opportunities in FP7 and other programs, conducted in the frames of the GEO-RECAP project, combined with the Coaching and Mobility schemes resulted in the new projects, project proposals, joint research projects and collaboration agreements with participation of researchers from GTU-IC and GTU-MICM: i) 5th Call TEMPUS IV project (though not retained for funding); three submitted FP7-INCO-2013-9 project proposal – ii) „Knowledge Transfer Community to bridge the gap between research, innovation and business creation" (NoGAP); iii) "Reinforcing Cooperation with ENP (Ukraine and Georgia) to bridge the gap between research and innovation and industry needs to combat the societal challenge of climate actions, resource efficiency and raw materials supply" (INNOEASTBRIDGE); iv) Eastern Neighborhood R2I Capacity Building Platform in the field of Environment Monitoring and Observation (ENMO); one prepared FP7 project proposal – v) FP7-ICT-2013-11, Objective: ICT-2013.3.2; Joint research project between DFKI and GTU; collaboration agreements between GTU – HTW, GTU- UDS, TSU-UDS, Training grant at Zaragoza University for young researcher from (GTU-IC), etc. This underlines the sustainability of the project and indicates the increased

possibility for the future collaboration with European research community and participation in new joint projects. Moreover, successful evaluation of the abovementioned project proposals would imply the increase of linkage with economic and social environment, cooperation activities with SMEs, as in the country and the region, also in EU countries, especially in the fields of Renewable Energy, Material Sciences, Photonics, Environment Monitoring, applications of ICT and Mathematics in these and other areas, etc.

Implementation of the principles of the European system of Knowledge Triangle – business, research and innovation in the frames of GEO-RECAP project will foster the creation of new job opportunities within GTU-MICM and GTU-IC. In its turn this will attract the young generation of scientists, the potential carriers of innovation and stimulate the development of collaborative research in the country.

Georgian members of GEO-RECAP have gained experience from European colleagues with regard to the project management and coordination. Conducted SWOT analysis and created Strategy Development Agendas, leaded by European partners, are important documents, which will support and guide the research centers to increase their regional coverage and to improve response to the existing socio-economic conditions. Thus GTU-IC and GTU-MICM will be able to act as trend-setters, multipliers and examples of best practice with regard to international research cooperation and science management. This will maximize the impact of the project on the Georgian ICT research community.

4.2 Main dissemination activities

The leader of the task - GTU was directly supported by ERCIM, DFKI and ICARTI for dissemination channels and targets (e.g. publication of project results through ERCIM magazine, ICARTI scientific board meetings etc.). All materials are available at SESAM (6 Publications; 48 Dissemination Activities, Exploitable Foreground) and , also at <http://www.georecap.eu> (Dissemination Activities, Publications and Related Conferences).

As all European research projects, GEO-RECAP disseminated the results to the general public via the project website and via EC dissemination channels.

Dissemination and exploitation plan followed the principle of appropriateness as described in the FP7 grant agreement (General Conditions, II.2), i.e. any GEO-RECAP dissemination and exploitation measures fulfilled the criteria of being both targeted and meaningful. GEO-RECAP did not invest into overly heavy promotion and dissemination activities, but instead relied on already existing channels and integration of the project results with ongoing activities and initiatives (e.g. reports at the ICARTI scientific board meetings to ensure impact on policy level, reports at ERCIM working group meetings and meetings of related projects, publication of project results through ERCIM magazine, connection/integration of the 1st networking event to/into major European ICT conference, conducting informational workshops etc.). During the course of the project dissemination activities, the partners acknowledged the support from the EC and acted in accordance with the rules and principles given by the EC's "Guide for successful communication".

All project results are of a general public nature and are available for free and unlimited use. No consortium partner plans any commercial exploitation of the results. At the same time, the project materials (e.g. training materials, promotional material, strategic document etc.) bears a project copyright to prevent unauthorized and improper use of external entities (e.g. commercial distribution or unauthorized change).

4.2.1 Documents for dissemination:

Training materials for the training workshops:

- **Science-related contents:**
 - FP7 ICT funding opportunities
 - Any other relevant EU funding opportunities for collaboration
- **Contents related to practical EU project acquisition and management:**
 - Proposal writing and design of cooperative research projects
 - Financial regime of cooperative research projects
 - Legal and administrative implications, in particular IPR
 - Partner search and finding

Promotional materials for the training and networking events

- Presentations of research proposals, ideas
- GEO-RECAP brochure including concept and objectives, major events and outcomes
- GEO-RECAP flyer and poster including concept and objectives, outcomes, and major event

Strategy papers “GTU-MICM strategic development agenda” and “GTU-IC strategic development agenda”

- Data related to the SWOT-analysis
- Resulting overview of GTU-MICM's and GTU-IC's capacities in terms of strengths, weaknesses, threats and opportunities
- Detailed agenda for the strategic development of GTU-MICM and GTU-IC

Project reports

- Details on the particular activities carried out (namely networking activities, training activities, strategy development activities)
- Details on corresponding deliverables, milestones and results achieved

Other relevant and supportive documents

- Agenda and call for networking events as well as outcomes of the events/participant feedback
- Agenda and call for training events as well as outcomes of the events/participant feedback
- Relevant documents on existing and ongoing developments on policy-level

4.2.2 Means for dissemination¹:

Project website (PU, RC)

- Strategic document of the project (White Paper “GTU-MICM and GTU-IC strategic development agenda”)
- Project reports Information on project-related events (calls and agendas for both training and networking events, outcomes of these events)
- Training materials of the training workshops
- Promotional materials (presentations, brochure, flyer, poster)
- E-Newsletter and mailing lists facility
- Links to and from the ERCIM web site (www.ercim.eu)
- Other relevant and supportive documents

Two training events (RC)

- Promotional materials for the event (brochure, flyer, poster)
- Training materials and contents (presentations etc.)
- Outcomes of the training events / participants feedback

Two networking events (RC, PL)

- Presentations of the participants
- Outcomes of the networking events (in particular list of envisaged collaborations / joint-projects)/participants feedback Promotional materials for the event (brochure, flyer, poster, press release)

ERCIM magazines “ERCIM News” (RC)

- Information on project-related events (calls and agendas for both training and networking events, outcomes of these events)
- Major outcomes of project activities (networking, training, strategy development) and project progress in general
- On request: promotional materials (brochure, flyer, poster)

ICARTI website (RC, PL)

- Information on project-related events (calls and agendas for both training and networking events, outcomes of these events)
- Major outcomes of project activities (networking, training, strategy development) and project progress in general

¹ RC = research community, PL = policy level, PU = general public

4.2.3 Dissemination activities

Project official events and meetings

During the course of the project there were held 8 project meetings. Overall 14 presentations were made at the Networking Events, 16 presentations and training materials (plus 8 handouts) – at the Training Events, 14 research presentations were made at various events (see the list below).

Agenda, flyers, invitations were published and handed out at the Networking Events in Budapest and Tbilisi. Agenda, handouts, evaluations of GTU-IC and GTU-MICM project proposals were published and handed out at the – Training Events and other project meetings.

Strategic documents

On the basis of SWOT analysis two strategy papers were created for GTU-MICM and GTU-IC. White Paper was published on the project and partner organizations' websites; corresponding brochures (hardcopies) were distributed in both institutes and GTU administrations and libraries.

Workshops & Seminars

Georgian team of GEO-RECAP started to disseminate the aims and objectives of the project right after the favorable evaluation of the project proposal to the researchers from MICM and IC, though the scientists from the other organizations also used to attend the workshops and seminars organized for this purpose. 6 local, informational meetings were held at GTU-MICM and GTU-IC, were except of the objectives of GEO-RECAP, the topics concerning Framework Programmes of European Union were also actively considered.

The main aims of the workshops were:

- To bring awareness about FP7 to Georgian research community
- To explain the goals and objectives of GEO-RECAP to Georgian researchers
- To prepare the selection process for future Training and Networking events; to give advice how to write project proposals, how to find partners etc.

These meetings raised the interest of researchers of both institutes, GTU-MICM and GTU-IC. 18 project proposals, prepared already in November, 2010, for the Kick off Meeting, large number of scientists ready to attend the Networking and Training events can be regarded as the illustration of this fact.

ICARTI, in the frames of the GEO-RECAP project has conducted a number of activities providing the networking ability between Georgian and EU organizations and scientists:

- In parallel to the GEO-RECAP project Kick Off Meeting ICARTI organized another event, where the main objective was the visits of German and Ukrainian experts. It was one more opportunity for the networking for Georgian scientists. They received information at first-hand about ICT Call 7, about how to prepare good proposal, how to find partners etc.
- At the 1st Networking event and *Fet 11* conference in Budapest the head of ICARTI organized several meetings and networking of Georgian delegation with EC funded Ideal-ist project representatives

- In parallel to the 1st Training Event of GEO-RECAP, ICARTI organized EC funded EXTEND project conference and all the scientists, participants of the trainings attended the conference as well. The coordinator of GEO-RECAP presented the project in the section of „Success Stories“. Dr. B. Kilosanidze (GTU-IC) talked about the ongoing research and possible joint project in FP7 ICT Call 8/9.

The head of ICARTI initiated several meetings with European companies and organizations, such as the meetings at the offices of the Italian company “APRE”, Spanish company “Muficata”, and German organization “Steinbeis Europa-Zentrum”. These activities were supported with the project’s Mobility Scheme and resulted in new collaborative project proposals (see the details in the paragraph – “Description of main S & T results/foregrounds” of this report).

Overall GEO-RECAP promoted and advertised the main ideas/principles of the project at 24 events and workshops (see the list below).

Conferences, Posters, Publications

During the project implementation Georgian researchers attended 5 International Scientific Conferences. 7 posters were designed. 6 publications were made (see the list below).

Conclusion

Distinct and targeted dissemination strategy allowed GEO-RECAP project to achieve and spread excellence not only with regard to the training and networking measures undertaken, but also with regard to the creation and implementation of an agenda for the strategic development of Georgian research centers in ICT. In order to present existing cooperation experiences and to demonstrate added-value and feasibility of international collaboration in research, the training and networking events highlighted “success stories” of cooperation in ICT (both involving the consortium members and selected examples with participation of external partners). In addition, the training activities (both events and coaching scheme) allowed Georgian researchers to put theory in practice and to practically experience the work in an EU collaborative project. Guided and supported by the one of the best European research centers (DFKI), GTU-MICM and GTU-IC has acquired knowledge and experience to act as best-practice examples for strategy development in Georgia. Such positive experiences and examples underline and illustrate that GEO-RECAP’s capacity building measures and strategy are indeed highly effective and feasible, which in turn will inspire other Georgian research centers.

4.2.4 List of the documents for dissemination

Here we start with Project Events and Meetings and give the list of Training materials and Strategy Papers, which is the core of the Exploitable Foreground. The workshops, conferences, publications, presentations at various Events, including research proposals, are listed as well:

- **Project Events and Meetings**

1. Kick Off Meeting, 22 – 23, November, 2010, Tbilisi, Georgia, (GTU)
2. 1st Networking Event, 3 – 6, May, 2011, Budapest, Hungary, (Novotel)
3. 1st Training Event, 18 – 20, June, 2011, Tbilisi, Georgia, (GTU)
4. Project Meeting, 24 September – 1 October, 2011, Sophia Antipolis, France (ERCIM)
5. Project Meeting, 4 – 9 November, Saarbrücken, 2011, Germany (DFKI)
6. Project Meeting, 23 – 25 April, 2012, Saarbrücken, Germany (DFKI)
7. 2nd Networking Event, 27 – 28 June, 2012, Tbilisi, Georgia (GTU)
8. 2nd Training Event & Final Meeting, 15 – 16, October, 2012, Tbilisi, Georgia, (GTU)

- **Training materials:**

1. Andrea Lösch, Andrey Girenko. CeLTech – Organisation and Management. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
2. Andrea Lösch, Andrey Girenko. GEO-RECAP: Further steps in WP4 Strategy Development. . GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
3. Andrea Lösch, Andrey Girenko. CeLTech – Introduction to WP 4 Strategy Development. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
4. Andrea Lösch, Andrey Girenko. Practice – How to proceed with my proposal idea. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
5. Andrea Lösch, Andrey Girenko. Evaluation of GTU-MICM and GTU-IC Research Proposals. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
6. Andrea Lösch, Andrey Girenko. Handouts. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
7. G. Kochoradze. International Center for Advancement of Research, Technology and Innovation Profile. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
8. G. Kochoradze. GEO-RECAP Project Management and Dissemination. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
9. G. Kochoradze. EU-Georgia S&T Cooperation in ICT. GEO-RECAP 1st Training Event in Tbilisi. 18-20 June, 2011
10. Andrea Lösch, Andrey Girenko. Outlook – Horizon 2020. GEO-RECAP 2nd Training Event in Tbilisi. 15-16 October, 2012
11. Andrea Lösch, Andrey Girenko. New Opportunities in the ICT Work Programme 2013. GEO-RECAP 2nd Training Event in Tbilisi. 15-16 October, 2012
12. Andrea Lösch, Andrey Girenko. Funding Opportunities for Georgian Researchers within Marie Curie (FP7 / Horizon 2020). GEO-RECAP 2nd Training Event in Tbilisi. 15-16 October, 2012
13. Andrey Girenko. Submission procedures, reporting, IPR. GEO-RECAP 2nd Training Event in Tbilisi. 15-16 October, 2012
14. G. Kochoradze. Importance of the GEO-RECAP Project and the Role of ICARTI in its Implementation. GEO-RECAP 2nd Training Event in Tbilisi. 15-16 October, 2012
15. P. Kunz. How to use ERCIM. GEO-RECAP 2nd Training Event in Tbilisi. 15-16 October, 2012
16. Andrea Lösch. GIRAF PM Services Role & Tasks. GEO-RECAP Final Meeting. Tbilisi. 15-16 October, 2012

- **Strategic documents/ white paper**

1. Strategy paper "GTU-MICM Strategic Development agenda"
2. Strategy paper "GTU-IC Strategic Development agenda"

- **Materials – published and handed out at the events:**

- Agenda, flyers, invitations were published and handed out at the Networking Events
- Agenda, handouts, evaluations of GTU-IC and GTU-MICM project proposals were published and handed out at the Training Events and other project meetings

- **Presentations at the Networking Events:**

1. George Giorgobiani, G. Mumladze. GTU-MICM>U-IC – structure, profile, research. 1st Networking Event
2. Jerome Chilloux. ERCIM tasks in the GEO-RECAP project. 1st Networking Event
3. Emma Liere. ERCIM fellowship program. 1st Networking Event
4. Tedore Dolidze. EU projects and Rustaveli National Science Foundation. 1st Networking Event
5. George Giorgobiani. GEO-RECAP project implementation. 2nd Networking Event
6. Pierre Guisset. ERCIM, a European instrument to cooperate for excellence in ICT research. 2nd Networking Event
7. Givi Kochoradze. Dissemination Activities of GEO- RECAP. 2nd Networking Event
8. Revaz Grigolia. GEO- RECAP project activities at the Institute of Cybernetics. 2nd Networking Event
9. Givi Kochoradze. Georgia- Reforms, innovation policy and NCP activity in Georgia. 2nd Networking Event
10. Alex Grishin, Hans Bergquist. Review of scientific activities of the Royal Institute of technology (Sweden). 2nd Networking Event
11. Tofiq Babayev. ICT NCP structure in Azerbaijan. 2nd Networking Event
12. Vadym Yashenkov. ICT policy (programs) in Ukraine. 2nd Networking Event
13. Ramaz Kvatadze. Georgia – E-infrastructure in South Caucasus Countries for Science. 2nd Networking Event
14. Elena Zamsa. NCP Network in Moldova. 2nd Networking Event

- **Presentations of research proposals and ideas** *(At various events)*

1. A. Chanishvili. Information Recording in Photosensitive Photonic Cholesteric Liquid Crystals. 11th Int. Conf. Exhibit. 4-6 May, Budapest, Hungary
2. A. Chanishvili. Three Layered LC Lasers for UV-Vis-NIR Spectral Range.
3. D. Jishiasvili. Development of the new one dimensional nanomaterials for ultrasensitive gas sensors.
4. E. Turkia. Integrating (Meta-) Models in a Unified Context.
5. G. Ghlonti. Design of unified analytical information space for social and economic environment.
6. H. Meladze et al. Investigation of Radioactive Fall-outs in Frontier Zones of Nuclear Station in Case of Accident on Atomic Power Station.
7. Z. Sanikidze. Computer Modeling of White Noise and its Application.

8. B. Partsvania. Design of New System for Prostate Cancer Early Diagnosis Based on the Near Infrared Irradiation
9. G. Petriashvili. Noble nanoparticles doped Polymer and Liquid Crystal Compositions - Some Novel Aspects of Application
10. B. Kilosanidze. Development of an innovation real-time sensor of polarization state of light on the bases of integral polarization-holographic element for high-level polarization-holographic protective system
11. D. Jishiashvili. Hydrazine-assisted Routes to 1D Nitride and Oxide Nanomaterials for Environmental and Energy Applications
12. Z. Tabagari et al. Elections Management Information Communication System VoterBallot
13. E. Turkia, Nino Topuria. Integration of Process-Modeling Standards for Software Development
14. G. Ghlonti. Information Resource Management System of Subject Area

• **Workshops & Seminars** (*Project official events not included*)

1. GEO-RECAP Objectives. 10.12.2010, GTU-MICM, Tbilisi, Georgia
2. GEO-RECAP Mobility Program. 15.02.2011, GTU-MICM, Tbilisi, Georgia
3. The Mobile Learning Environment (MoLE) Kick-Off Workshop. The Office of Naval Research Global (ONRG), 09-11 February 2011, London, UK.
4. EC funded EXTEND project Meeting. National Academy of Sciences of Ukraine, 23 February 2011, Kiev, Ukraine.
5. EC funded IncoNet project meeting in Georgian Technical University, 26.03.11, Tbilisi, Georgia
6. ISTC Conference "International Cooperation for Sustainable Development through Science and Technology", 19-20 April 2011, GTU, Tbilisi, Georgia.
7. Radio interview of G.Kochoradze in Georgian Radio (Green Wave studio). Theme of the interview: Innovations and technology developments in European countries and perspectives of its development in Georgia, 2011
8. Proposer's Day. European Commission, 19-21 May 2011, Budapest, Hungary.
9. EXTEND Project final conference – "The Way Forward for the Information Society in the Eastern Europe and South Caucasus countries: Priorities and Challenges", 16-21 June 2011, Tbilisi, Georgia.
10. Meeting with the stuff of GTU-IC and GTU-MICM. 11.10.2011, GTU-MICM, Tbilisi, Georgia.
11. The Eastern Partnership National Platform Meeting. 02.03.12, Europe House, Tbilisi, Georgia.
12. New Directions for Growth, Regulation, and Public Policy: Broadband and Mobile for the South Caucasus. 21 - 24 May, 2012, Tbilisi, Georgia,
13. Royal Institute of Technologies, Meeting of Georgian and Swedish scientists supported by STCU foundation, 22-25 May 2012, Stockholm, Sweden.
14. Advanced training session (workshop) for FP7 Contact Points in South Caucasus (SC) countries and Moldova, organized in the frame of IncoNet CA/SC project, 28-29 May 2012, Hotel "Primavera" Tbilisi, Georgia.

15. Meeting at the office of the company APRE, Discussion about collaboration opportunities. 28.09.12, Rome, Italy.
16. Seminar organized by EC ICT NCP Dr. Givi Kochoradze, "Review of the EC fp7 program current Calls and opportunities". Tavadze Institute of Material Research and Metallurgy, 24.10.12, Tbilisi, Georgia.
17. Meeting concerning to new call of proposals launched under Tempus IV program, "Funding for Higher Education Institutions", TSU, 12.11.12, Tbilisi, Georgia.
18. Meeting at the office of Steinbeis Europa Zentrum, Discussion about a joint project proposal. 26.10.12, Stuttgart, Germany.

• **Posters:**

1. A. Chanishvili. Information Recording in Photosensitive Photonic Cholesteric Liquid Crystals. 11th Int. Conf. Exhibit. 4-6 May, Budapest, Hungary
2. A. Chanishvili. Three Layered LC Lasers for UV-Vis-NIR Spectral Range. 1st Networking Event. 6 May, Budapest, Hungary
3. D. Jishiasvili. Development of the new one dimensional nanomaterials for ultrasensitive gas sensors. 1st Networking Event. 6 May, Budapest, Hungary
4. E. Turkia. Integrating (Meta-) Models in a Unified Context. 1st Networking Event. 6 May, Budapest, Hungary
5. G. Ghlonti. Design of unified analytical information space for social and economic environment. 1st Networking Event. 6 May, Budapest, Hungary
6. H. Meladze et al. Investigation of Radioactive Fall-outs in Frontier Zones of Nuclear Station in Case of Accident on Atomic Power Station. 1st Networking Event. 6 May, Budapest, Hungary
7. Z. Sanikidze. Computer Modeling of White Noise and its Application. 1st Networking Event. 6 May, Budapest, Hungary

• **Publications:**

1. G. Giorgobiani. Supporting Georgia in Enhancing the Cooperation Capacities of its ICT Research Centres" (#84, January, 2011, pg. 9; <http://ercim-news.ercim.eu/images/stories/EN84/EN84-web.pdf>)
2. Pierre Guisset. Call for expression of interest: ERCIM Members to host Georgian Researchers for a Short Visit" (#87, October, 2011, pg. 61; <http://ercim-news.ercim.eu/images/stories/EN87/EN87-web.pdf>)
3. G. Giorgobiani, G. Kochoradze. Cooperation with Georgia's ICTResearch Centres: The 2nd GEO-RECAP Networking Event. ERCIM News #91, October, 2012, pg. 4. <http://ercim-news.ercim.eu/images/stories/EN91/EN91-web.pdf>
4. Z. Tabagari, Z. Sanikidze, G. Giorgobiani. Voterballot - A New Application for ICT in Elections. ERCIM News #91, October, 2012, pg. 28-29 <http://ercim-news.ercim.eu/images/stories/EN91/EN91-web.pdf>
5. Z. Tabagari, Z. Sanikidze, G. Giorgobiani. Elections Management Information Communication System VoterBallot. World Academy of Scien. Engin. Techn. 69, 2102, 1119-1121. <http://www.waset.org/journals/waset/v69/v69-213.pdf>
6. G. Giorgobiani, V. Tarieladze. A version of the rearrangement theorem. pg. 125, 2012. http://rmi.ge/~gmu/III_Annual_Conference/geo/confprogram/Conference2012.pdf

- **Conferences**

1. European Future Technologies Conference and Exhibition 2011 (Fet11), 4-6 May, 2011, Budapest, Hungary
2. 7th Silk Road International Conference “Challenges and Opportunities for Sustainable Economic Development of Eurasian Countries, 24-26 May, 2012, Tbilisi-Batumi, Georgia.
<http://silkroad.ibsu.edu.ge/index.php/silkroad/silkroad7th/schedConf/program>
3. III International conference of the Georgian mathematical union. Batumi, Georgia, 2-9 September, 2012.
http://rmi.ge/~gmu/III_Annual_Conference/geo/confprogram/Conference2012.pdf
4. ICEECE 2012 : International Conference on Electrical, Computer, Electronics, Communication Engineering. Rome, Italy, September 26-27, 2012.
<http://www.waset.org/conferences/2012/rome/iceece/>
5. The 6th International Conference on Application of Information and Communication Technologies (AICT2012) Georgia, Tbilisi, 17-19 October, 2012 <http://aict.info/2012/>

- **Website & web applications**

Project Website.

Project website played an important role as an instrument for dissemination and in the coordination of communication. The website has been created by the IT group from GTU-MICM and is launched on the Server, purchased in the frames of the project. The website is regularly updated and contains

Public area: General information about the project, Call announcement and application form together with online submission tool, Information about the project events (agendas for both training and networking events, outcomes of the events), Presentations of partner organizations, Presentations of project proposals, Information about the related conferences, publications and dissemination activities, strategy development etc.

Restricted password-protected area, accessible to the partners. It provides access to all project reports, training materials etc.

BSCW – Shared Workspace System (<https://bscw.ercim.eu/pub/>). – designed by Ms. Linh Nguen from ERCIM, especially for GEO-RECAP for quick and efficient online collaboration.

GTU-MICM , GTU-IC, GTU, DFKI, GIRAF, ERCIM, ICARTI Websites contain information about the GEO-RECAP project. Information (in Georgian) about the 2nd Networking Event was also published on the websites of:

- GTU <http://news.gtu.ge/index.php?newsid=1887><http://ghn.ge/news-70064.html>
- GHN News Agency website <http://ghn.ge/news-70064.html>

4.3 Exploitation of results

All results of the project are of noncommercial use. They represent a public knowledge, which can be applied for future training activities in GTU and any other research organization of Georgia, aiming to improve their administrations and science management structures, to participate in the European Framework Programmes, etc. These documents can be used for the training of research and research management staff after the end of the project in 2012.

Exploitable Foreground

1. **CeLTech – Organisation and Management"**

Explanation: Organization and Management structure of CeLTech is considered as an example and a model of excellence for Georgian research centers aiming to be transformed into the European style organizations

2. **Further steps in Strategy Development"**

Explanation: Strategy Development is the one of the mainstreams of the project GEO-RECAP to help and support Georgian research centers to create sustainable strategy for the future development. European partners DFKI and GIRAF support GTU-MICM and GTU-IC with appropriate training materials and documents with regard to relevant organizational structures

3. **CeLTech – Introduction to Strategy Development**

Explanation: Strategy Development is the one of the mainstreams of the project GEO-RECAP to help and support Georgian research centers to create sustainable strategy for the future development. European partners DFKI and GIRAF support GTU-MICM and GTU-IC with appropriate training materials and documents with regard to relevant organizational structures

4. **Practice – How to proceed with my proposal idea**

Explanation: this is the training material for the Georgian researchers to get them familiar with the European Framework Programmes, in particular FP7; to teach them how to find appropriate calls and partners, etc.

5. **Evaluation of GTU-MICM and GTU-IC Research Proposals**

Explanation: during the course of the project about 18 research proposals and ideas were generated and presented by the researchers of GTU-MICM and GTU-IC. These proposals were discussed at various project events and meetings. DFKI and GIRAF were the competent reviewers and evaluators in this respect, thus helping Georgian researchers to modify and drive their research to European standards, to find appropriate European counterparts, etc.

6. **GEO-RECAP Project Management and Dissemination**

Explanation: partner ICARTI, due its tasks in WP5 (Project Management and Dissemination) leaded and supported Georgian research centers in this regard. This is the training material advising how to manage European Framework Projects, how to conduct networking events, workshops and other dissemination activities.

7. **EU-Georgia S&T Cooperation in ICT**

Explanation: training material telling about the cooperation between EU and Georgia in the field of ICT and its applications, about the ended and current collaborative projects, future cooperation opportunities.

8. Outlook – Horizon 2020

Explanation: this training material gives an overview of the forthcoming new, integrated funding system Horizon 2020 – the Framework Programme for Research and Innovation, about its strategic priorities and international cooperation policy, etc.

9. New Opportunities in the ICT Work Programme 2013

Explanation: this training material gives an overview for the ICT Work Programme 2013, about its objectives, calls and challenges

10. Funding Opportunities for Georgian Researchers within Marie Curie (FP7 / Horizon 2020)

Explanation: this training material contains advises for Georgian Researchers as to how to specify relevant challenges, find appropriate calls and partners within Marie Curie (FP7 / Horizon 2020) Program

11. Submission procedures, reporting, IPR

Explanation: this training material deals with issues of proposal submission procedures, reporting, IPR management etc.

12. Importance of the GEO-RECAP Project and the Role of ICARTI

Explanation: this training material deals with the importance of the GEO-RECAP Project for the Georgian research community, describes the main objectives of the project in the context of the reforms of the research system of the country

13. How to use ERCIM

Explanation: this training material describes how to use ERCIM dissemination channels, e.g. ERCIM News and working groups, how to apply to the fellowship programs etc.

14. GTU-MICM Strategic Development agenda

Explanation: this is an important document guiding Georgian research centers to create sustainable strategy for the development. It's based on the evaluation of the last period's reforms in science and education system of Georgia, done by the head of ICARTI, and the conducted SWOT analysis in GTU-MICM

15. GTU-IC Strategic Development agenda

Explanation: this is an important document guiding Georgian research centers to create sustainable strategy for the development. It's based on the evaluation of the last period's reforms in science and education system of Georgia, done by the head of ICARTI, and the conducted SWOT analysis in GTU-IC

5. WEBSITE ADDRESS & CONTACT DETAILS

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