

The Global Research Outreach ("GRO") Program Proposal Guide & Format for the Year 2017

Sponsored by Samsung Electronics Co., Ltd.("SEC") and related Samsung companies ("SAMSUNG")

Conducted by SEC's R&D Center, Samsung Advanced Institute of Technology ("SAIT")

Proposal Submission

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Proposal Submission

1) Required Documents & Submission

Applicants shall submit the following two (2) documents as an one (1) research proposal package :

1. **Research Proposal (“Research Project Specification”)** : Proposals are recommended to be no longer than 10 pages; additional pages may be used for supporting figures, images, data, CV or other documentation.
For CV, please provide a one (1) or two (2) page CV for the principal investigator, any co-principal investigator, and the proposed graduate student. Please attach all CVs at the end of Research Proposal. Research Proposals are expected to provide answers, in English, in **MS Word format only**. Detailed format of the contents will be described in ‘Format of Research Proposal’ chapter of this document.
2. **Scanned Copy of Singed GRO RA Acceptance Letter** : To be eligible, applicants shall submit an unmodified GRO RA Acceptance Letter which is completed and signed by an authorized official of the universities.
GRO RA will be sent by request via email listed in contact information below.
Scanned file of the GRO RA Acceptance Letter shall be sent in **PDF format only**.

America	gro.usa@samsung.com
Asia & Oceania (except China, Japan)	gro.asia@samsung.com
China	gro.china@samsung.com
Japan	gro.japan@samsung.com
Europe	gro.europe@samsung.com
Russia & CIS	gro.russia@samsung.com

All applicants shall submit the above two (2) documents to the following [GRO online submission website](#)

2) Format of Research Proposal

Proposal is expected to provide answers, in English, in *MS Word format*, to the following questions. It is recommend to be no longer than 10 pages. Appendices, if included, are not included as part of such 10 page count.

Recommended file name of proposal

: *number of sub-theme_Proposal title_Pi University name_Pi Last name*

(e.g. if you would submit the proposal in a sub-theme of Emotion Intelligence from Recognition to Generation, file name is recommended as 1-2_proposal title_Stanford_Smith)

PART 1 : Proposal Identification

1. Title of Proposal (recommend using larger font size than for contents below)
2. 2017 GRO Project Theme Title
3. 2017 GRO Project Sub-theme Title
4. Principal Investigator ("PI") Information : a) Full name of PI, b) Affiliation (University, School, College and/or Department), c) Contact Information (Postal Address, e-Mail, Phone)
5. Co-PI Information (if applicable) : a) Full name of Co-PI, b) Affiliation (University, School, College and/or Department), c) Contact Information (Postal Address, e-Mail, Phone)
6. Announce Joint Proposal (if applicable)
(e.g., This proposal is a joint proposal of "A" university and "B" university. Representative university is "A".)

PART 2 : Project Summary (Approximately 1 page)

1. Announcement of Multi-year Proposal (if applicable)
(e.g., I propose three(3) year research, and specific plan for this year will be described in this proposal)
2. Research Abstracts and Goals
3. One or two keywords that best capture the principal focus of proposed research

PART 3 : Description of Project

1. Project Duration (mm/dd /yyyy ~ mm/dd/yyyy)
2. Research Objectives
3. Significance of Research
4. Research Plan and Technical Approach
5. Milestones (Month1, Month 2,...)
6. Expected Outcomes and Results (should describe tangible outcomes and intangible outcomes separately)

PART 4 : Budget (in US\$)

1. Total Budget (Shall describe Direct expenses and Indirect costs (overhead) up to US\$100,000 overall)

Appendix : Resources & Others

1. CVs of PI, Co-PI(s), and the proposed graduate student(s)
2. Equipment or Facilities
3. Others
4. External Funding, if applicable

If your proposal is multi-year based, please specify in PART 2. But, PARTs 1, 3, and 4 shall be completed on a one(1) year proposal base. If your proposal is a joint proposal, PART 4. Budget shall be detailed separately for each university but total amount of budget of two universities cannot exceed US\$100,000.

Please note that, for multi-year proposals, funds will be made for one(1) year only. Your project may get funded for up to three(3) consecutive years only after you submit updated Proposals and get selected again for the subsequent year(s). This will be guided by your counterpart in SAMSUNG during the first year.

3) GRO Research Agreement(RA) Acceptance Letter

Advance acceptance by an applicant's university of GRO Program Research Agreement ("RA") is required for each Research Proposal ("Research Project Specification") submission.

GRO RA Acceptance Letter template is provided as a file on GRO Web as below.

[GRO Research Agreement Acceptance Letter](#)

GRO RA Acceptance Letter also certifies that no proprietary or confidential information is included in submitted proposals.

GRO RA Acceptance Letter shall be completed and signed – without modification – by an authorized official of the university. Applicants are responsible for determining the appropriate authority in their university to sign GRO RA Acceptance Letter. The signature of the applicant will not be considered, under any circumstances, as proof of acceptance by the university.

Applicants shall submit scanned GRO RA Acceptance Letter by email in PDF file format.

Selected universities must additionally sign GRO RA before funding process starts. The completed GRO RA Acceptance Letter is not a substitute for the signed GRO RA.

4) FAQ & Contacts

[Frequently Asked Questions](#) are answered in official GRO website.

For further inquiry and any comments, please contact us:

America	gro.usa@samsung.com
Asia & Oceania (except China, Japan)	gro.asia@samsung.com
China	gro.china@samsung.com
Japan	gro.japan@samsung.com
Europe	gro.europe@samsung.com
Russia & CIS	gro.russia@samsung.com

Appendix

1. Overview

The GRO Program is SAMSUNG's annual call for proposal, which is conducted by "SAIT, open to world leading universities. It is designed to create opportunities – at colleges and universities around the world – for exploring breakthrough & innovative research. With this call, SAMSUNG invites your best and novel ideas on a range of compelling research subjects with the goal of establishing a collaborative research relationship with SAMSUNG.

2017 GRO Timeline

Web Submission starts	:	April 3, 2017
Application Deadline	:	June 12, 2017 (09:00 A.M. Korea Standard Time)
Announcement of Finalists (via email)	:	August

Eligibility for Funds

To be eligible for funds under the GRO Program, **an applicant's university must accept GRO Research Agreement ("RA") as part of the proposal-submission process** (see, Proposal Submission). Key provisions of the RA specify project conditions including funding process for the project and intellectual property rights, and clarify other important aspects of the research collaboration.

Initial acceptance by the applicant's university is accomplished through submission of a GRO RA Acceptance Letter without any modifications, detailed in Proposal Submission . GRO RA Acceptance Letter also confirms that no confidential or proprietary information will be included in the proposal to be submitted. SAMSUNG will treat all information in the proposal to be submitted as non-confidential and non-proprietary.

SAMSUNG values the personal information of its applicants and strives to protect each applicant's personal information. Also SAMSUNG adheres to all applicable laws and regulations including the Personal Information Protection Act of Korea (the "PIPA"). To be eligible, applicant(s) shall consent to the collection and/or use of its/their personal information in accordance with the PIPA. For more details on the processing of personal information, please refer to the PIPA posted on GRO homepage.

Universities selected for funds shall also sign the GRO RA before funding process starts.

Evaluation Criteria

The GRO Program seeks ambitious and innovative proposals that expand SAMSUNG's field(s) of research and provide breakthrough ideas for SAMSUNG's research needs. SAMSUNG's interest is to build research relationships with world-class universities that have a track record of conducting creative research and deliver innovative ideas to SAMSUNG.

SAMSUNG will evaluate proposals for the following four primary criteria :

1. The innovativeness of the research,
2. The potential societal and/or business impact expected from the development, dissemination and use of project results,
3. The feasibility of the research with respect to the planned time, objectives, intended results and resources available, and
4. The research competencies of the principal investigator in relevant field(s).

SAMSUNG will have sole discretion in selection.

Confidential and Proprietary Information

Applicants shall ensure that no confidential or proprietary information is included in submitted proposals. SAMSUNG will treat all information submitted in proposals as non-confidential and non-proprietary.

Under the GRO Program, the proposals will be reviewed by SAMSUNG personnel, including SAMSUNG researchers, who will become knowledgeable about the information provided by the university in the project proposal. During the evaluation process, SAMSUNG will not maintain the confidentiality of information set forth in the proposals. Accordingly, SAMSUNG does not require, and does not desire, to receive any information that may be deemed confidential by the university.

2. 2017 Research Themes

2017 GRO Program is seeking proposals in twenty six (26) research themes.

You can find detailed call for proposal of each theme on the [GRO website](#).

We are actively looking for collaboration on the special areas, but other themes are also welcome as innovation has no boundaries.

Theme	Related SAMSUNG Companies
Intelligence & Recognition	
Visual Intelligence & Computational Intelligence	SEC
Emotion Intelligence from Recognition to Generation	SEC
Question Answering with Natural Language Processing	SEC
Multimodal Human Behavior Understanding, Human Social Cognition	SEC
Deep Bayesian Networks	SEC
Augmented Reality	
Next Generation of AR Technologies and Applications	SEC
Neural Processor	
Neural Processor Architecture & Associated Algorithm	SEC
Quantum Computer	
Scalable Multi-qubit Devices & Quantum Algorithms	SEC
Next Generation Computing	
Cache Hierarchy Performance for CPUs	SEC
Power-sharing and Power-control Algorithms for CPU/GPU in Smartphones	SEC
New Device & Circuit Concept	
New Device & Circuit Concept	SEC
Mobile/Wearable Technology	
Non-invasive Mobile Healthcare Technology	SEC
Enabling Technologies for Wearable Devices	SEC
Ultra-low Power 360-degree Video Camera	SEC

Theme	Related SAMSUNG Companies
New Imaging	
Next Generation Image Sensor and Camera System	SEC
OASLM for High Quality Hologram Imaging	SEC
Metaphotonics & Photonic Sensors	
Highly Tunable Permittivity	SEC
Acoustic Metamaterials	SEC
Personal Service Robots	
Robotics for Next Generation Home Appliance	SEC
Cloud Computing	
Serverless Data Processing for Efficient Data Stream	SEC
Cloud Service Orchestration	SEC
Intelligent Media Processing in the Cloud	SEC
Security & Privacy	
Data Analytics and AI-based Security	SEC
Privacy Preserving Data Analysis	SEC
IoT Anomaly Detection	SDS
Light Weight Mutual Authentication for IoT	SDS
Autonomous Driving	
Data Analytics for Driving and Situation Awareness	SEC
Automotive Driving Simulator	SEC
Software Engineering	
Risk Evaluation Method based on the Analysis of Code/Quality Data for S/W Quality Control	SEC
Software Maintenance and Evolution	SEC
NIR Emitting Materials	
Near-infrared Emitters	SEC
2D Materials & Applications	

Theme	Related SAMSUNG Companies
2D Materials & Applications	SEC
New QD Materials	
QD of New Structure & Composition	SEC
High Energy Density Battery with Ultra-Safety Functions	
Safety-Enhanced High Energy Density Battery	SEC
Wireless Power Transmission & Energy Harvesting	
Long Distance Wireless Charging for Mobile Devices	SEC
High Power Energy Harvesting for Mobile Devices	SEC
Multi-functional Optical Films and Coatings	
Multi-Functional Optical Films and Coatings	SEC
Functional Oxide	
Epitaxial Oxide Thin Films	SEC
Material Informatics	
Data-driven Materials Property/Structure Prediction	SEC
AI for Analytical Science	
Machine Learning based Analytics for Spectroscopy	SEC
Ultrafast Electron Microscopy	
Structure-Carrier Relation at the Space-Time Limit	SEC
Semiconductor	
Spin-based Memories	SEC
Customized Transistors	SEC
Dielectric Materials for Next Generation Capacitor	
Novel Dielectric Materials and Design Technologies for MLCC or Other Capacitor Types	SEM
New High-K Material with Atomic Level Deposition	SEM

[Notes]

SEC : Samsung Electronics Co., Ltd.

SDS : Samsung SDS Co., Ltd.

SEM : Samsung Electro-Mechanics Co., Ltd.