

TU-RAC  
THAMMASAT UNIVERSITY  
RESEARCH & CONSULTANCY

Research & Consultancy  
for Our Happy Country..  
and Lovely Environment..



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## Message from the Rector

Thammasat University Research and Consultancy Institute (TU-RAC) has worked on behalf of Thammasat University in providing research management, consultancy, and training for government sectors, state enterprises, and private sectors since 1998. I have noticed continuing developments taking place quantitatively and qualitatively. Various external organizations have allowed TU-RAC to provide academic services, consultancy, research services, and training for

them. TU-RAC has also provided academic knowledge in various areas of expertise for government and private sectors accordingly to the changing social contexts. At the same time, TU-RAC has still maintained standard in academic services and efficient internal operation.

TU-RAC would not be able to perform without the cooperation of the instructors and researchers in Thammasat University. These are key personnel who continually and efficiently apply research knowledge and creativity in consultancy, research services and training for government and private sectors.

On the occasion of TU-RAC's anniversary, I, as the Chairman of the Board of Directors, believe that TU-RAC will continually develop its academic and research services and consultancy and will continually play its best role in promoting research. Also I believe that TU-RAC will constantly do the best for Thammasat University, do the best for our nation and do the best for Thai people.

*Somkit Lertpaithoon*

Professor Dr. Somkit Lertpaithoon  
The Rector, Thammasat University



## Message from the Director



Thailand is moving on to a major change of economic model 'Thailand 4.0' accordingly to the government policy. This change focuses on revolutionizing research systems, developing knowledge, creativity and innovations in technologies and target industries, and sustainable development of natural resources and environment. The objectives of the transformation are to improve the quality of life and the environment, and to help Thai people learn to value the natural resources. In 2017, Thammasat University Research and Consultancy Institute (TU-RAC), which is responsible for research administration, providing consultancy, training and academic seminars, has constantly been following the government policy. TU-RAC also connects researchers from Thammasat University to other researchers, both from Thailand and from other countries, in order to integrate different areas of knowledge through research processes and put the research results to good use.

In 2017, TU-RAC has completed research projects in various areas for government and private sectors. The project values were more than 1,700 million baht altogether. In computer area, under **'Upgrading Community Products Project: Offline 2 Online (B2C)'**, TU-RAC has completed capacity building program on **'Online Marketing for Thai Entrepreneurs.'**

This program was provided as a model in developing training courses and online marketing channel handbooks which help Thai entrepreneurs to continuously use online marketing channels efficiently and to expand their marketing channels internationally. Another project in the computer area was **'Automated Detection of Authentic and Counterfeit Rolex Submariner on Smartphone Project.'** In this project, application software which automatically detects authentication and counterfeit of this brand-named watch by using smartphone has been developed. The classifiers for detecting authentication have been developed by applying deep neural network theory.

In accordance with the objectives of Military Grants for Munitions Research Project, TU-RAC has also worked with the military in developing **'Intelligent Reconnoitering System'** for military robots which detect underground explosives. This system helps promote military capability and country protection. It also promotes country protection industries resulting in munitions prototypes which might bring about production for military use and for commercial purposes.

As for medical instruments, **'iwalk'** is the result of another TU-RAC research project entitled **'The Design and Development of Gait Training Machine for Hemiplegia People and Stroke Patients.'** It is an instrument which serves as an easier access to physiotherapy. Less import of physiotherapy instruments means lower trade deficits.

**'Promotion of Community Capacity Building and Community Economy towards Sufficiency Economy Philosophy'** was a project in environmental management conducted by TU-RAC. This project provided guidelines in building community capacity and strengthening community economy. It also helped increase quality of life and happiness based on Sufficiency Economy Philosophy. Moreover, it promoted learning processes and participation in community administration and management.

Another TU-RAC's project in environmental management was **'Royal Initiative Project for Community Water Resources Management (Southern Region): Evaluation and Follow-up Year 2017.'** This is a co-operative project of educational institutes and experts in Thailand concerning following-up, analyzing, and evaluating data on community water resources which brought about useful database and services.

TU-RAC has tried to publicize the knowledge in all areas from Thammasat University in order that the knowledge can extensively be put into practice. Knowledge from research projects, consultancy, training and seminars which TU-RAC has completed for both government and private sectors in 2017 has been compiled and published in **'Proceedings of researches and projects, Thammasat University Research and Consultancy Institute, 2015, vol.3.'** In order to provide the public with useful knowledge base for country development, the research abstracts have also been uploaded onto the website of TU-RAC.

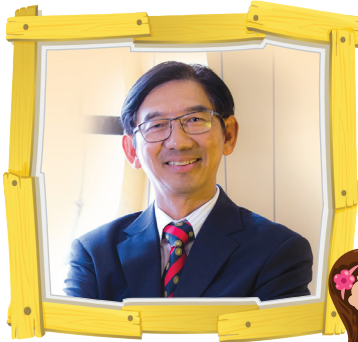
May I extend my sincerest thanks and appreciation to the Rector and the Administrators of Thammasat University, researchers, and staff of TU-RAC who have been providing great support in the work of TU-RAC. I hope that TU-RAC will be able to perform more fruitful work for Thammasat University and Thai society.

*Urya Weesakul*

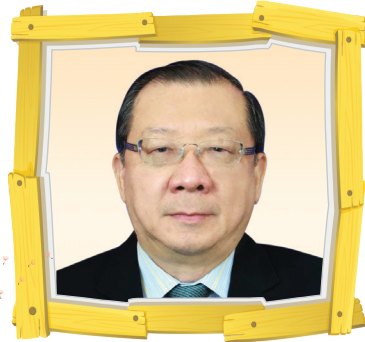
Associate Professor Dr. Urya Weesakul  
Director of Thammasat University Research and Consultancy Institute



# Board of Directors



Professor  
Dr. Somkit Lertpaithoon  
Chairman of the Board



Professor  
Dr. Praipol Koomsup  
Committee Member

## Education

- Doctorat en Droit, Paris II, France
- Diplome d'Etudes Approfondies, Droit Public, Paris II, France
- Barrister at Law, Institute of Legal Training of the Bar Association of Thailand
- Bachelor of Law, Thammasat University, Thailand

## Education

- Ph.D. in Economics, Yale University
- M.A. (Economics), Thammasat University
- Bachelor of Economics, University of Western Australia





# Board of Directors



Professor  
Dr. Pramuan Tapchaisri  
Committee Member



Professor  
Dr. Sakon Varanyuwatana  
Committee Member

## Education

- Ph.D. in Microbiology, Mahidol University, Thailand
- M.Sc. in Microbiology, Mahidol University, Thailand
- B.Sc. in Medical Technology, Mahidol University, Thailand

## Education

- Ph.D. in Social Science (Economics Major), Syracuse University, U.S.A.
- M.S. in Economics, Syracuse University, U.S.A.
- B.Econ., University of the Thai Chamber of Commerce



# Board of Directors



Professor  
Dr. Siriluck Rotchanakitumnuai  
Committee Member



Associate Professor  
Dr. Jearranai Lek-uthai  
Committee Member

## Education

- Ph.D. in Management of Technology, School of Management, Asian Institute of Technology, Thailand
- M.B.A. University of Texas at Austin, U.S.A
- Accounting & Auditing International Student Exchange Program (ISEP) University of Utah, Salt Lake City, U.S.A.
- M.S. in Accounting, Thammasat University, Thailand
- B.Acc. (Honour), Thammasat University, Thailand

## Education

- Ph.D. in Textiles, University of Manchester Institute of Science and Technology, U.K.
- M.Sc. in Energy Technology, King Mongkut's Institute of Science and Technology, Thonburi, Thailand
- M.B.A., Ramkhamhaeng University, Thailand
- M.P.A., Ramkhamhaeng University, Thailand
- LL.B., Thammasat University, Thailand
- B.S. in Physics, Chiang Mai University, Thailand



# Board of Directors



Associate Professor  
Dr. Prapat Wangskarn  
Committee Member



Associate Professor  
Preecha Wanichsetakul, M.D.  
Committee Member

## Education

- D.Eng. (Chemical Engineering), Cleveland State University, U.S.A.
- M.Eng. (Chemical Engineering), Oregon State University, U.S.A.
- B.Sc. (Food Technology), Chulalongkorn University, Thailand

## Education

- Diploma in Family Medicine, The Medical Council of Thailand
- Diploma in Obstetrics and Gynecology, The Medical Council of Thailand
- High Vocational Certificate (Obstetrics and Gynecology), Chulalongkorn University, Thailand
- Doctor of Medicine, Chulalongkorn University, Thailand
- B.Sc. in Medical Science, Chulalongkorn University, Thailand



# Board of Directors



Associate Professor  
Voraphat Luckanatinvong  
Committee Member

## Education

- M.Sc. (Agriculture), Kasetsart University, Thailand
- B.Sc. (Agriculture), Kasetsart University, Thailand



Associate Professor  
Dr. Supasawad Chardchawarn  
Committee Member

## Education

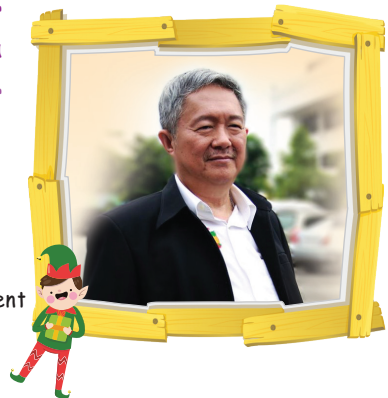
- Ph.D. in Political Science, Kobe University, Japan
- MSc. in Local Governance, The University of Birmingham, UK
- B.A. in Political Science (second-class honors), Thammasat University, Thailand



Assistant Professor  
Dr. Jitti Mongkolnchaiarunya  
Committee Member

## Education

- Ph.D. in Urban Environmental Management, Asian Institute of Technology, Thailand
- M.Sc. in Rural Development Planning, Asian Institute of Technology, Thailand
- Diploma in Social Rural Leadership Development SEARSOLIN, Xavier University, Philippines
- B. of Social Work, Thammasat University, Thailand







# Board of Directors



Associate Professor  
Dr. Uruya Weesakul  
Committee Member and Secretary

## Education

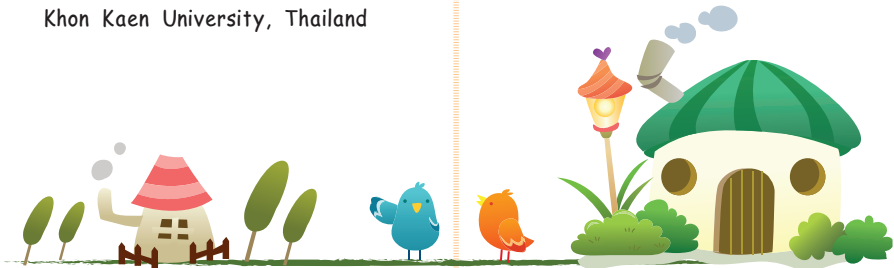
- Ph.D. in Mechanical and Civil Engineering, University of Montpellier II, France
- DESS (Remote Sensing), GDTA, Toulouse, France
- M.Eng. (Water Resources Engineering), AIT, Thailand
- B.Eng. (Civil Engineering) (Second Class Honour), Khon Kaen University, Thailand



Assistant Professor  
Dr. Witawats Satasook  
Deputy Director

## Education

- Ph.D. in Mechanical Engineering, Illinois Institute of Technology, Chicago
- M. Eng. (Mechanical Engineering), California State University, Fullerton
- B.Eng. (Mechanical Engineering), Kasetsart University, Thailand



# TU-RAC staff



## Manager

**Somsunee Duangkae**



## Project Management Department

**Wanna Keawpuang**

Head of Project Management Department



## Corporate Communications Division



**Onnapa Thiansanguankul**

Corporate Communications Officer



**Yuphonrat Phongnairat**

Corporate Communications Officer

## Research Coordinating Division



**Pathomgant Bunnag**

Research Coordinating Officer



**Namtip Meekanthong**

Research Coordinating Officer



**Jutamas Mosika**

Research Coordinating Officer



< **Thitinun Sukhee**

Research Coordinating Officer

**Jirabhak Sriboonyasilp** >

Research Coordinating Officer



## Accounting and Finance Division



**Sansanee Kanchanapun**

Accounting Officer

## Planning and System Development Division



**Kantima Pongsak**

Planning and System Development Officer



**Isarapong Wijitsuk**

Research Coordinating Officer

(During October 1, 2016 to August 4, 2017)

## Administrative Division



**Jintayarn Apinantakul**

Financial Officer



**Suwannee Tiwatansakul**

Monitoring and Evaluation Officer



**Pornpun Sangketkarn**

Administration Officer



**Jutamas Prathed**

Financial Officer



**Siri Kittaveelarp**

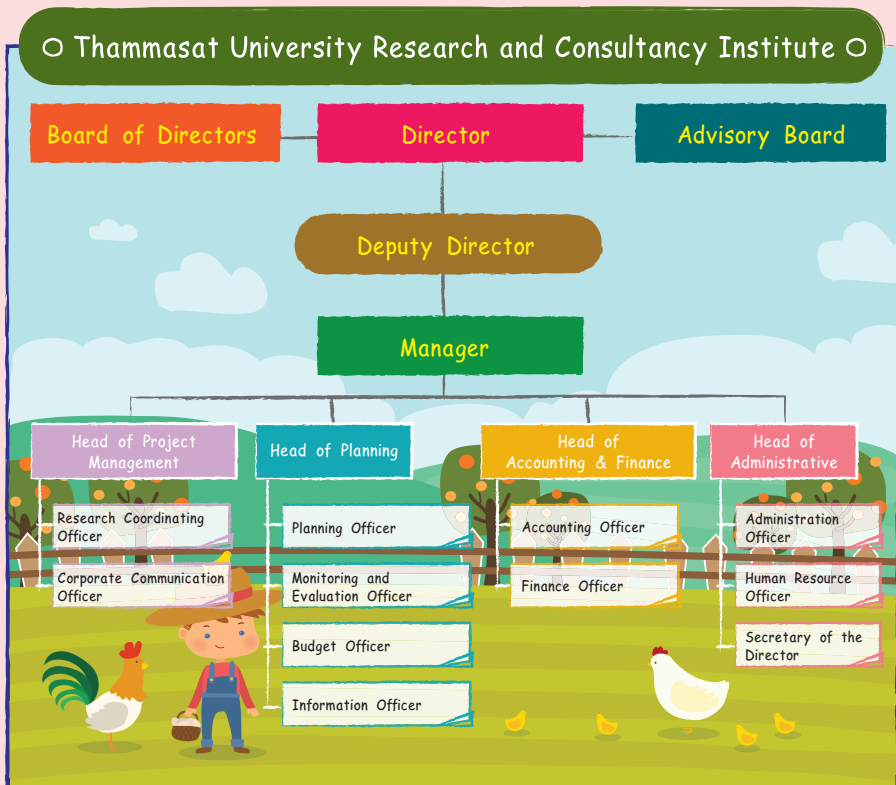
Monitoring and Evaluation Officer



**Tippawan Thanadecharoenchok**  
Secretary of the Director

# Organization Structure

Thammasat University Research and Consultancy Institute (TU-RAC) operates under the management of the Board of Directors with the Rector as chairman. The Board of Directors is responsible for making the Institute's policies and plans which comply with Thammasat University's policy guidelines and the Institute's establishment objectives. The executive director oversees and supervises the general management of the Institute and is the chief of all its staff. The deputy director assist the executive director to management of the Institute. The manager is appointed by the Rector and is responsible for supervising the staff's performance of their duties and assisting the director in overseeing the general management. The organizational structure of the Institute is as follows:




# Organization Background





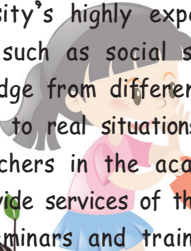
## Organization Background



The twenty-first century is an age of information and technology. The strengths and weaknesses of any organizations depend on the information they acquire. That is, information is one crucial factor that enables government organizations, state enterprises, and private organizations to effectively adjust themselves to current rapid changes promptly. Therefore, rapid accessibility to reliable information can give organizations the edge over others, making them stronger and more likely to be successful. Research properly conducted according to research methodologies is an important tool for organizations to gain accurate, clear, and reliable information. Research also contributes to the accumulation of information and knowledge necessary for the development of the country.

Thammasat University realizes the significant role of research as a source of new knowledge essential to the progress of organizations. In addition, the university has a strong commitment to provide the academic services to society and various organizations. As a consequence, the university established the Research and Consultancy Institute or TU-RAC which aims at providing research services on the university's behalf. It is an autonomous Institute, making its operation flexible. TU-RAC is the university's only Institute that is allowed to provide services in conducting research, consultancy, and seminars and training programs to government organizations, state enterprises, and private organizations on behalf of Thammasat University.

The Institute's research projects are implemented by the university's highly experienced faculty members from various fields of study such as social science and science. These researchers integrate knowledge from different fields and establish new concepts which can be applied to real situations. They have been highly recognized as outstanding researchers in the academic world. This ensures the Institute's ability to provide services of the highest quality in conducting research, consultancy, and seminars and training programs.





# MISSION

1

Conduct Multidisciplinary researches, integrating knowledge from a variety of academic disciplines through research process, resulting in economic, social and environment problem solving as well as in innovative best practice for all fields such as Social Science, Humanities, Science, Technology and Health Science applicable for both private and government sectors.

2

Provide research service, consultant service and training service for both private and government sectors by linking our own TU researchers and outsider experts at national and international levels.

3

Develop our own TU-RAC to be a happy working place with good governance and standard working procedure.

4

Develop the characteristics of a democratic workplace culture within TU-RAC along with provide research service to enhance learning and awareness of social responsibility conveyed to organizations.

5

Cooperate to maintain a democratic society, arts and culture.

## VISION

Our vision is aiming to be a hub of integrated knowledge at national and international levels, as results of research process as well as consultancy for both government and private sectors by linking experts and researchers from our own TU lecturers as well as outside researchers. Knowledge and best practices, gained from research results will consequently contribute to our Thai Society, making our country happy with lovely environment.

## Core Values

TU-RAC's performance is based on the following eight core values:

Unity

Problem-solving ability

Achievement-oriented teamwork

Innovation

Sincerity and Integrity

Diversity of opinions

Expertise

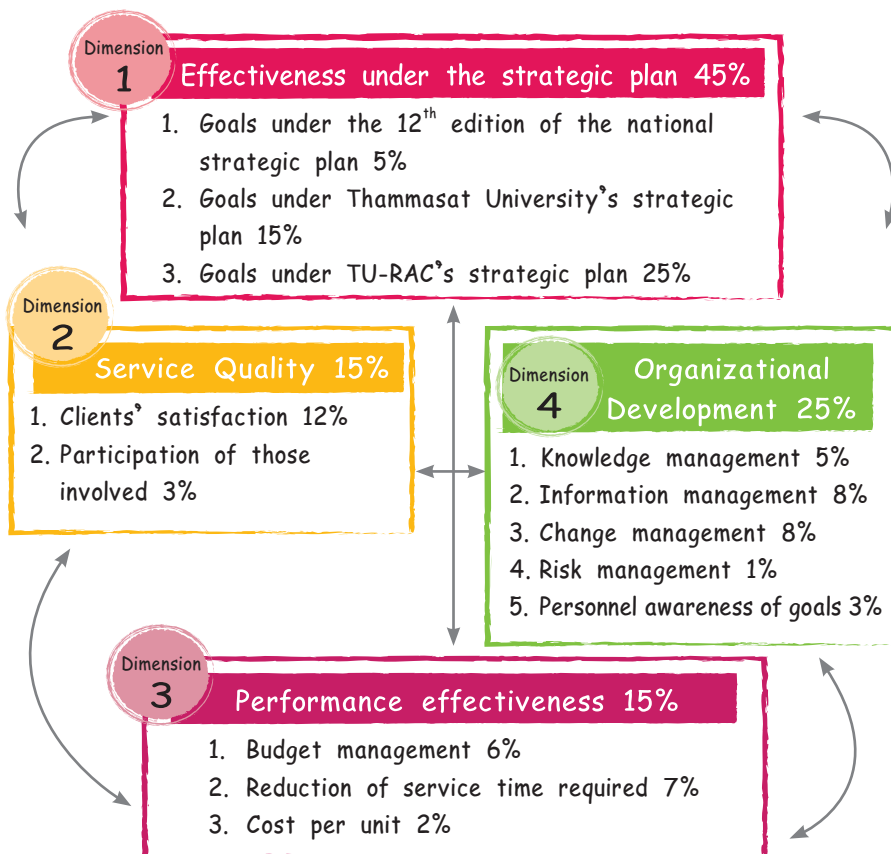
Systematic thinking and decision-making

# Key Success Factors (KSFs):

1. Developing full-service information system
2. Promoting staff's capability in accordance with work efficiency system
3. Maintaining service standard



TU-RAC created an action plan for the fiscal year 2017 in accordance with its strategic plan and developed a framework for the evaluation of its performance. The framework conformed to that of the Office of the Public Sector Development Commission in four dimensions as follows:



# The Consultancy Registration

TU-RAC registered to become a provider of consultancy services with the Thai Consultant Database Center, Ministry of Finance, on October 6, 2000, under the registration number 668. At present, TU-RAC is a registered consultant in 15 areas as follows:



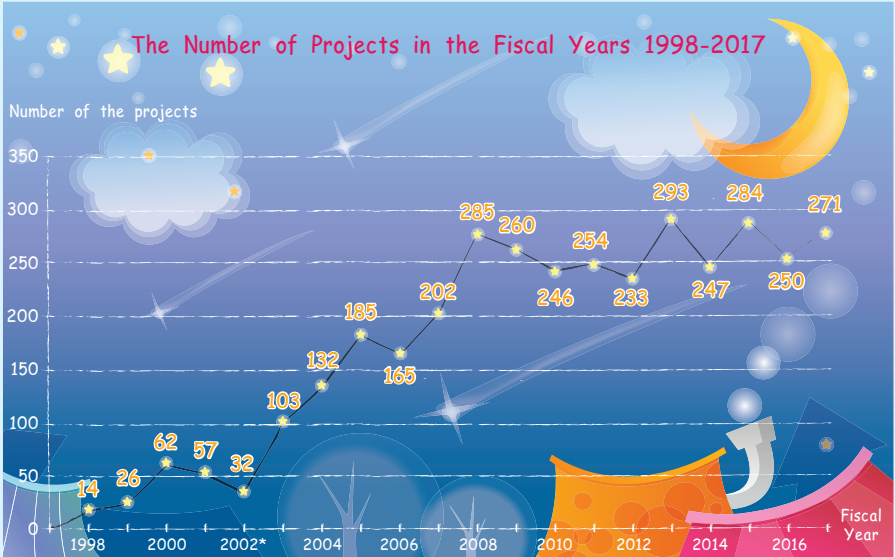
Operating Results in  
the Fiscal Year 2017





# Operating Results in the Fiscal Year 2017

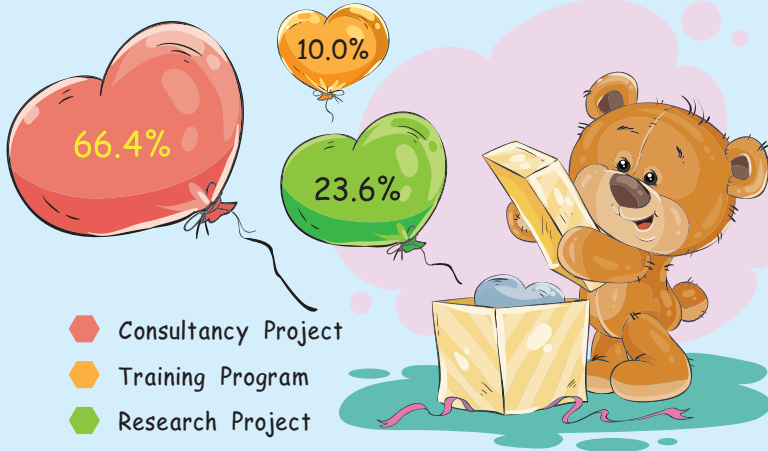
In the fiscal year 2017, the public and the private organizations which consider TU-RAC a credible and trustworthy Institute commissioned the Institute to implement 271 projects.



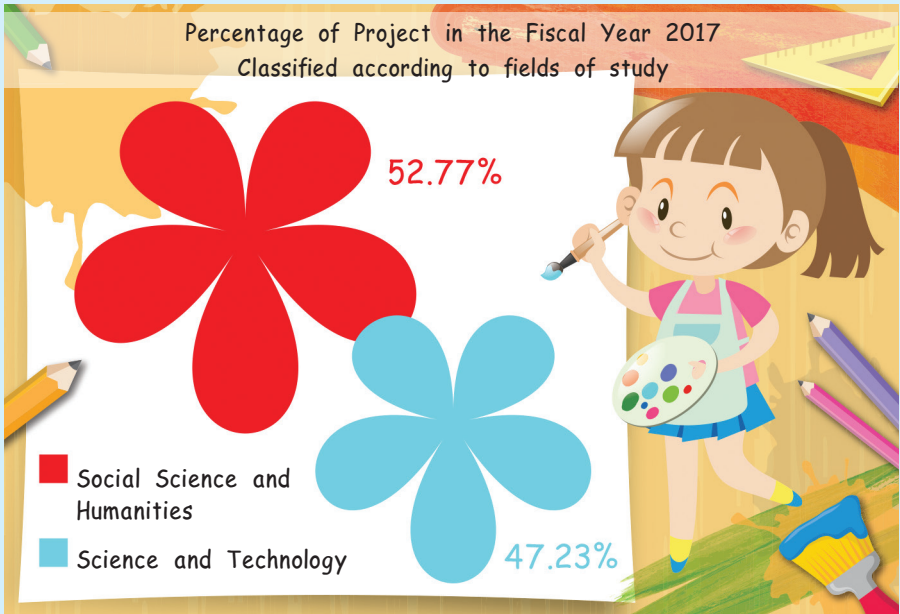
Note: \*The budget was allocated for 4 months (June 1-September 30, 2002) due to the budgeting system adjustment.

In the fiscal year 2017, the Institute’s projects were divided into three main categories: 180 consultancy projects or 66.40% of total project; 27 training programs or 10.00% of total project; and 64 research projects or 23.60% of total project value.

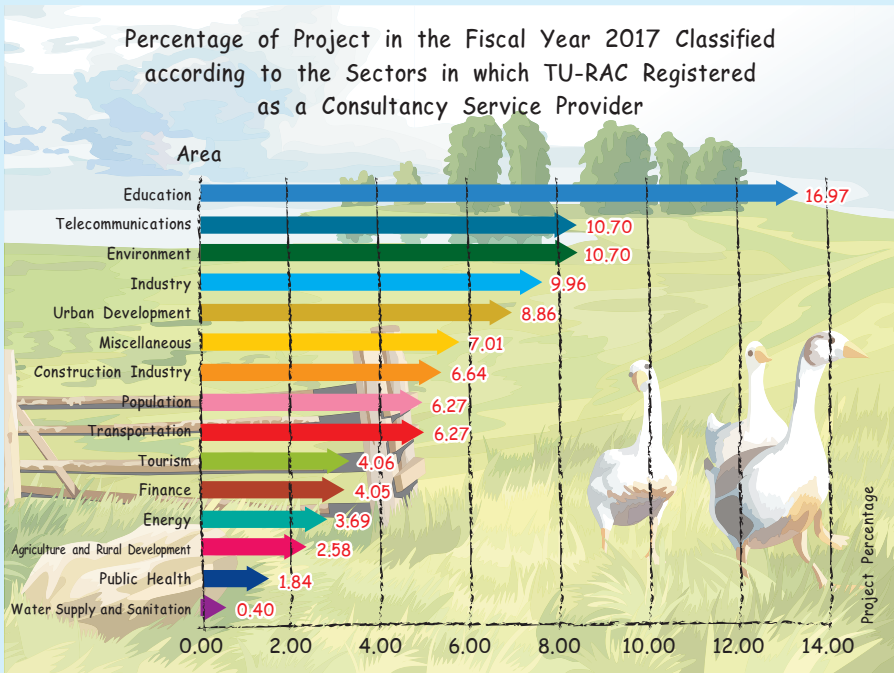
Percentage of Project in the Fiscal Year 2017  
Classified according to Types of Projects



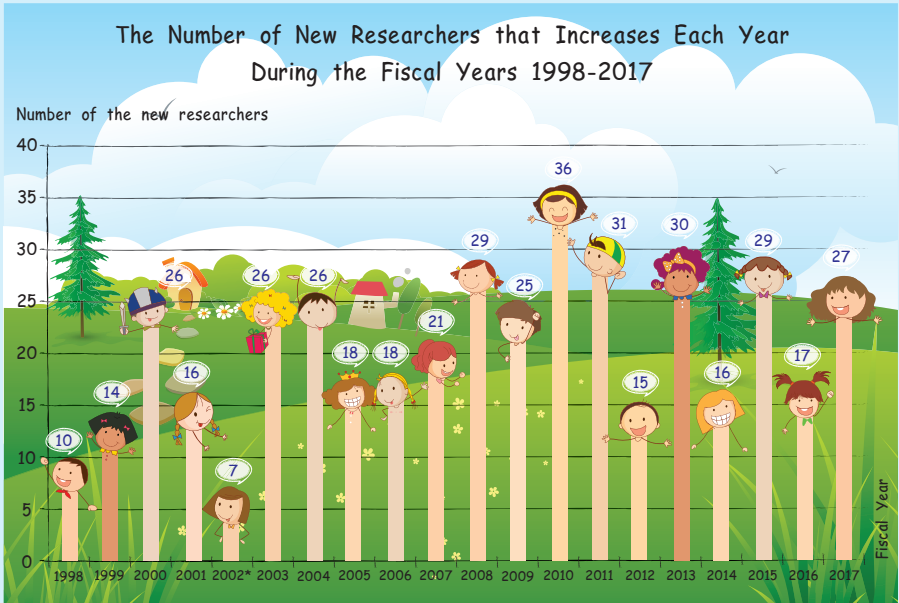
The fiscal year 2017 projects classified according to fields of study are as follows: 143 projects in social science or 52.77% of total project and 128 projects in science and technology or 47.23% of total project value.



In the fiscal year 2017, the proportion of project values according to the areas in which TU-RAC registered as a consultancy service provider with the Thai Consultant Database Center, Ministry of Finance, is as follows: 7.01% in miscellaneous sector, 6.27% in population, 10.70% in telecommunications, 9.96% in industry, 6.27% in transportation, 16.97% in education, 3.69% in energy, 4.05% in finance, 8.86% in urban development, 10.70% in environment, 4.06% in tourism, 0.4% in Water Supply and Sanitation, 2.58% in agriculture and rural development, 6.64% in construction industry and 1.84% in public health.



The Institute started operating on research projects in the fiscal year 1998. There were only 10 chief researchers. At present, there are a total of 352 chief researchers responsible for projects under TU-RAC coordination. Every fiscal year, the number of new researchers under TU-RAC coordination has increased. In the fiscal year 2017, there were 27 new researchers.



Note: \*The budget was allocated for 4 months (June 1-September 30, 2002) due to the budgeting system adjustment.

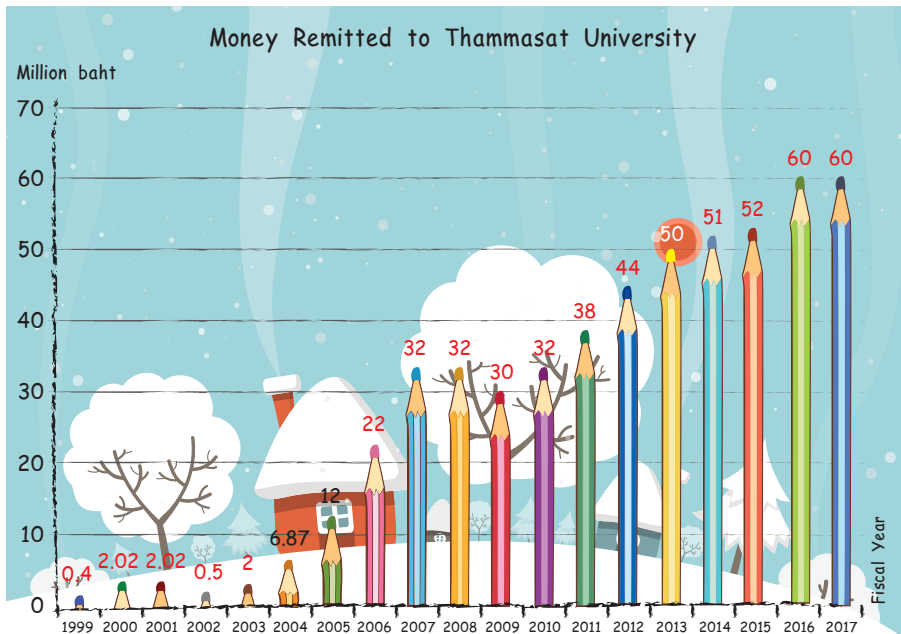
Money remitted to  
Thammasat University





# Money remitted to Thammasat University

Thammasat University Research and Consultancy Institute has continuously remitted the residual income from the Institute's operation to Thammasat University every year to support the university's research development, the teaching and learning as well as various other activities. In the fiscal year 2017, the Institute allocated its residual income of 60 million baht to the university.



# Project Activities





## Training on 'Human Rights: the Fundamental Knowledge for Office of Justice Affairs Personnel'



From January 9<sup>th</sup> to 11<sup>th</sup> , 2017, Office of Justice Affairs allowed Thammasat University Research and Consultancy Institute (TU-RAC) to organize a training session entitled '*Human Rights: the Fundamental Knowledge of Office for Justice Affairs Personnel*' at Chawalun Resort, Nakhonpathom for justice sectors, law enforcement sectors, personnel whose work relate to Human Rights, and those interested. There were 15 guest speakers from Thammasat University, San Diego State University (USA), Friedrich Naumann Foundation, and Rights and Liberties Protection Department. The training was intended to help justice sectors' personnel broaden their knowledge in human rights, let them exchange experiences, and learn from others. This allowed them to apply the knowledge in their work and strengthen the network of coordination in improving the justice.



## ● RMIT Study Trip 2017 ●

Royal Melbourne Institute of Technology (RMIT), Australia, in collaboration with Thammasat University Research and Consultancy Institute, organize a customized study trip for 38 RMIT undergraduate students for a period of 13 days. Classes and company visits are held in Bangkok and the industrial site in Rayong. The objective of the study trip is to provide the students with theoretical and practical perspectives of how local companies and international companies operate in Thailand, how capital market functions and to which extent governmental agencies promote Thai economy.





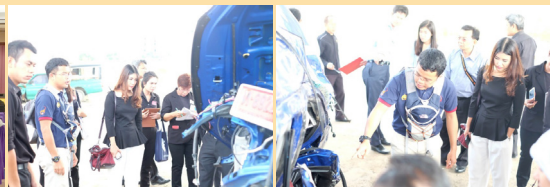
## Training sessions on *'Customer Relationship Management for Salespersons'*

IRPC Public Company Limited allowed TU-RAC to organize 2 training sessions entitled *'Customer Relationship Management for Salespersons'* from February 23<sup>rd</sup> to 24<sup>th</sup> and from March 23<sup>rd</sup> to 24<sup>th</sup>, 2017 at Samed Room, 6<sup>th</sup> floor, Enco B Building. The training sessions were intended to educate the participants about basic principles of Customer Relationship Management (CRM), purposes, and significance of CRM for corporate customers. This helped the employees understand the strategies for customer classification, and the strategies for analyzing and planning to fulfill customers' requirements.



## 'In Depth Accident Investigation Course' and Training for Road Safety Personnel

Department of Land Transport allowed TU-RAC to design 'In Depth Accident Investigation Course' and organize training sessions for road safety personnel. This project was intended to provide road safety personnel with the understanding in the causes of accidents and the prevention of accidents, injuries, and deaths. Knowledge of the causes of accidents brings about prevention of accidents, injuries and deaths. In order to find the true causes of accidents, it is essential to be educated and learn how to correctly analyze the causes of the accidents from real experiences. In depth accident investigation is an important device in analyzing the causes of the problems leading to correct problem solving. It took 150 days to complete 4 three-day training sessions. There were around 50 people in each session, or 224 participants altogether.





## 'The Promotion of Community Capacity Building and Community Economy towards Sufficiency Economy Philosophy'



The Division of Social Welfare has conducted a project entitled 'The Promotion of Community Capacity Building and Community Economy towards Sufficiency Economy Philosophy' in fiscal year 2017 and employed TU-RAC as the consultant of the project. TU-RAC has done a field survey on cultural resources and folk wisdom in order to create a database for city preservation in area-based development of 11 local and coastal communities. The 11 communities are Krok Yai Cha Community, Nong Tang May Community, Koh Kok Community, Klong Nam Hu Community, Nong Nam Yen Community, Ta Kuan-Ao Pradu Community, Sophon Community, Soi Prapa Community, Soi Ruam Pattana Community, Nong Bua Dang Community, and Nong Fab Community.

On Monday, March 13, 2017, the first workshop session on 'the Promotion of Community Capacity Building and Community Economy towards Sufficiency Economy Philosophy' Project was held for the community members in order to analyze, make suggestions and collect data on cultural resources and folk wisdom in meeting room 405, 4<sup>th</sup> floor, Map Ta Phut Municipality Office.

In this workshop, Mr. Daterit Simasiri, Deputy Municipal Clerk of Map Ta Phut, was the workshop chair. Mr. Banphot Jitdon, the Head of Map Ta Phut Municipal Council, Mrs. Walairat Tanyukul, Deputy Municipal Clerk, and other related people also participated in the workshop.

TU-RAC Activities





## Joining Alms Giving Ceremony on the 83<sup>rd</sup> Anniversary of Thammasat University



On June 27<sup>th</sup>, 2017, Asst. Prof. Dr. Witawats Satasook, the Deputy Director of TU-RAC and the staff from TU-RAC joined alms giving ceremony on the 83<sup>rd</sup> Anniversary of Thammasat University at Thammasat University, Tha Prachan.







# Researcher's Day 2016



Thammasat University Research and Consultancy Institute in cooperation with Research Administration Division has organized Researcher's Day 2016 on November 2<sup>nd</sup>, 2016 at Chomwang Room, Royal Thai Navy Convention Hall, Bangkok. The purpose of this event was to give special recognition, honor, and moral support to the lecturers and researchers of Thammasat University who have put great efforts in doing quality researches and helped growing reputation of Thammasat University.



## Seminar on 'The Regulations and Operation of TU-RAC'



On Friday, March 31, 2017, Professor Dr. Somkit Lertpaithoon, the Rector of Thammasat University, gave an opening speech for the seminar entitled 'The Regulations and Operation of TU-RAC.' In this seminar, Associate Professor Dr. Uruya Weesakul, the Director, and speakers from TU-RAC gave the information about regulations, research services, and consultancy through TU-RAC to Thammasat University Administrators, instructors and participants from different faculties and units in the University.



## Training sessions on 'Good Practices for Service Providers' and 'Procurement Frameworks and Regulations and Service Employment Contracts'



TU-RAC has organized 2 training sessions for its staff. The first training session on 'Good Practices for Service Providers' was held from June 3<sup>rd</sup> to 4<sup>th</sup>, 2017. It was intended to help TU-RAC staff to gain knowledge, develop good service skills and provide standard service for the customers. The guest speaker was Ajarn Nattakan Aramwit.

The second training session on 'Procurement Frameworks and Regulations and Service Employment Contracts' was held from June 10<sup>th</sup> to 11<sup>th</sup>, 2017. It was intended to provide TU-RAC staff with working guidelines concerning procurement frameworks and regulations, and related service employment contracts. Ajarn Supranee Jongthamawat, Ajarn Pornthip Puangkhum, and Ajarn Pussadee Yuyongsilp from the Comptroller General's Department were the guest speakers.





## Observation Visit and Research Management and Academic Services Network Strengthening

On Monday, June 19, 2017, Ajarn Dr. Bangorn Chatrungruang, the Director of Institute of Research and Development of Chiang Mai Rajabhat University and 10 institute staff have been given a warm welcome to TU-RAC Office on Tha Prachan Campus by Asst. Prof. Dr. Witawats Satasook, the Deputy Director of TU-RAC and Ms. Somsunee Duangkhae, the Office Secretary of TU-RAC. Visitors observed general operation and how 5 main missions of TU-RAC were carried on in order to improve the effectiveness and efficiency at work.



TU-RAC Researchers



# Faculty of Law



1. Professor Dr. Jaturon Thirawat	: thirawat@tu.ac.th
2. Professor Dr. Tweekiat Menakanist	: tweekiat@hotmail.com
3. Professor Dr. Boonsri Mewongukote	: boonsrim@tu.ac.th
4. Professor Dr. Prasit Pivavatnapanizh	: pras@tu.ac.th
5. Professor Dr. Prasit Aekaputra	: psackap@alpha.tu.ac.th
6. Professor Dr. Pathaichit Eagjariyakorn	: pathaich@tu.ac.th
7. Professor Dr. Wichitra Vichienchom	: witchatra@alpha.tu.ac.th
8. Professor Dr. Somkit Lertpaithoon	: l_somkit@tu.ac.th
9. Professor Dr. Sumet Sirikunchoat	: sirsumet@tu.ac.th
10. Professor Dr. Surapon Nitikraipot	: suraniti@tu.ac.th
11. Professor Dr. Surasak Likasitwatanakul	: surasakl@tu.ac.th
12. Professor Dr. Orapin Phonsuwan Sabyeroop	: orapinniti@yahoo.com
13. Professor Dr. Amnat Wongbandit	: wongban@tu.ac.th
14. Professor Dr. Udom Rathamarit	: udom@tu.ac.th
15. Professor Dr. Worachet Pakeerut	: worachet@tu.ac.th
16. Professor Dr. Sahaton Rattanapijit	: sahaton@tu.ac.th
17. Professor Narong Jaiharn	: narongja@tu.ac.th
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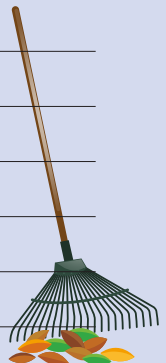
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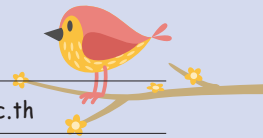
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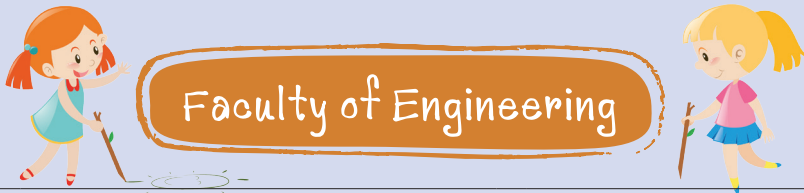
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Research Projects  
in the Fiscal Year 2017



# Research Projects in 2017

## Transportation Sector

Organization	Project
Department of land transport	International Conference on Logistics & Transport 2017
Department of Rural Roads	The Rural Roads Maintenance and Development Scheme to Support the Emergence of Dual Tracks Rail Transportation in the Upper North-Eastern Region of Thailand
	Road Safety Audit for Department of Rural Roads 2017
	Development of Front-End Data Center, Active Directory System and Citizen Service System
	The Project of Rural Road Strategy Development for Department of Rural Road (Group No.8 : Thammasat University)
Department of Business Development	ISO 9001 development for logistics business under upgrading thai logistics project fiscal year 2017
Inter City Motorway Division, Department of Highways	Maintenance of Systems and Equipments for Recovery Unit
	Traffic data collection and analysis on the Motorway number 7 and Motorway number 9

## Transportation Sector (Continued)

Organization	Project
Kerry Siam Seaport Co., Ltd.	Internal logistics Development for enhanced brand awareness
C.P.L.Group Public Co., Ltd.	Internal Conference on Logistics & Transport 2017
Sea Oil Public Company Limited	International Conference on Logistics & Transport 2017
WICE Logistics Public Company Limited	International Conference on Logistics & Transport 2017
SCG Logistics Management Company Limited	International Conference on Logistics & Transport 2017
	Logistics facilitation advisor for and on behalf of SCGL
Office of the Permanent Secretary, Ministry of Tourism and Sports	Master Plan for water tourism
National Science and Technology Development Agency	The study on Potential of Trolley Bus Policy Implementation in Pattaya City, Chonburi Province
Bureau Of Road Research and Development, Department of Highways	The Study of safe speed on Nation Highway for an Appropriate Speed Limit



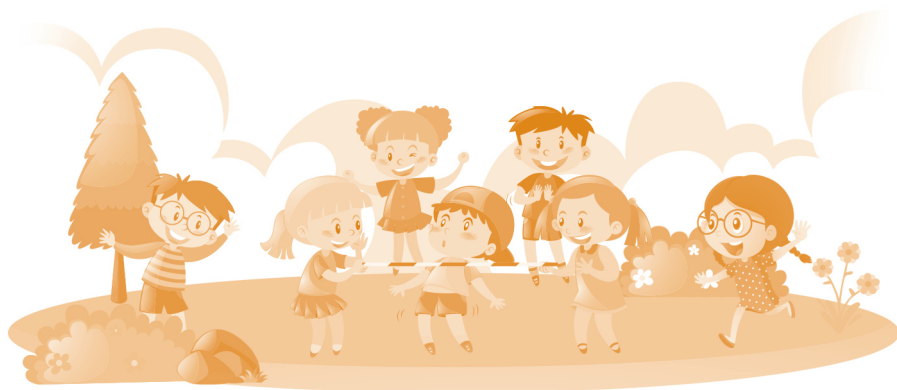
## Financial Sector

Organization	Project
Royal Melbourne Institute of Technology (RMIT), Australia	RMIT Study Trip 2017
The Treasury Department	Advisory on developing of draft of Terms of Reference, proposal of Public-Private-Partnership (PPP) investment, and draft of PPP Contract in accordance to The PPP Act B.E. 2556 Section 33 and for developing of documents relevant to leasing of federal lands on Sukhumvit Road in Bangpra Sub-District and Thung Sukhla Sub-District, Sri Racha District, Chon Buri Province in accordance to The PPP Act B.E. 2556 Section 5
	Review study on project in Accordance to The Public Private Partnership Act (PPP Act) B.E. 2556 Section 24 and 26 and to the Announcement by the Policy Committee on required details upon the project analysis and study by responsible institute B.E. 2557 Item 3
The Siam Commercial Bank Public Company Limited	Valuer Manager Development
Bank for Agriculture and Agricultural Co-operatives	Smart Supervisor
	Smart Supervisor



## Financial Sector (Continued)

Organization	Project
PTT Public Company Limited	Review study on project in accordance to the Public Private Partnership Act (PPP Act) B.E. 2556 Section 24 and 26 and to the Announcement by the Policy Committee on required details upon the project analysis and study by responsible institute B.E. 2557 Item 3
	Study on the NGV market and consumer's ideal station
Office of the Energy Regulatory Commission (OERC)	Accounting and Financial Report Analysis for Energy Tariff
Public Debt Management Office	Project for Hiring Consultants to Study, Survey, and Analyze Consulting Fees Data
Public Warehouse Organization	Developing Most Probable Use for Public Warehouse Organization's Thonburi Site



# Tourism Sector



Organization	Project
Department of Tourism	Strategic Tourism Development Plan for Department of Tourism : Year 2018-2021
Division II of Sectoral Industries Development	The Project on Promotion and Development of Herbal Product Support Center Model under the Program of Herbal SMEs Potential Enhancements supported by Budget Expenditures of the year 2017 in the Herbal City Issue
Tourism Authority of Thailand	Encouraging Educational Tourism Investment Project In Bound of The 1 <sup>st</sup> Chiang Saen Pier, Chiang Rai
	Study of Senior Tourist Needs and Demands: A Preparation for Domestic Tourism Development
Elite Holiday & Agency (Thailand) Co., Ltd.	Tourism for good health @Phetsamutkhiri
The Board of Investment of Thailand	International public relations project of Board investment of Thailand (BOI) 2017
Office of the Permanent Secretary, Ministry of Tourism and Sports	Project for Study, Analysis and Assessment Area For Purpose to be Tourism Clusters
	Developing for People and Tourism Management Phase 2
	Report on 2017 Tourism Economy in each quarter
	Development and Implementation on Tourism and Sports Collaboration Strategies to encourage the liberalization of the ASEAN Economic Community
	Sport Achives for Developing life Quality in order to Proceed the Administrator Strategy of Sport + Tourism under Region



## Education Sector


Organization	Project
Department for Development of Thai Traditional And Alternative Medicine Ministry of Public Health	Preparation and quality control of Yellow Surat formula extract for the study on efficacy and safety of Yellow Surat in diabetic wound healing
Right and Liberties Protection Department	The Integrated Plan to Help Victims of Crime in Thailand and the ASEAN Community (Phase 1)
	The Research on drafting second Country report for Convention Against Torture and other Cruel Inhuman or Degrading Treatment or Punishment, the first period
The Treasury Department	Training Program for Museum Management Enhancement of Bureau of Grand National Treasure
	Public Private Partnership Study For BangPra Golf Course
Excise Department	Research Project on Tax Stamp Designing for Tax Collection of Alcohol, Tobacco and Beverage Products
	Geography Information System (GIS) and Remote Sensing Technology 2016
Inter City Motorway Division, Department of Highways	ICT Maintenance and Consultant Project for Intercity Motorway of Thailand
Faculty of Medicine Vajira Hospital, Navamindradhiraj University	Drafting of regulations rules and notifications for Faculty of Medicine, Navamindradhiraj University




## Education Sector (Continued)

Organization	Project
Jirapas Realty Co., Ltd.	WIND LOAD STUDY FOR PHASE 1 SKV 36 BUILDING PROJECT BY WIND TUNNEL TEST
Sertis Co., Ltd.	Automated Skin Cancer using Images on Mobile Phone
Tiancheng. International property (Thailand) Co., Ltd.	WIND LOAD STUDY FOR TC ROYAL BUILDING PROJECT BY WIND TUNNEL TEST
BC Operations (Thailand) Limited	Creative Hubs Mapping
SIAM METAL CO., LTD.	INSPECTION AND EVALUATION OF STRUCTURAL AND FUNCTION PERFORMANCE OF FACADE SYSTEM FOR SALADAENG ONE AND TON SON PARK VIEW
Haadthip Public Company Limited	Carbon Footprint for Organization Verification: Haadthip Public Company Limited
NI.COM CO., LTD.	Project to evaluate the number and reach of the viewers of television programme produced and distributed by NI.COM Co., Ltd. via Army TV Station Channel 7
IRPC Public Company Limited	Carbon Footprint for Organization Verification: IRPC Public Company Limited, Phrapradaeng Depot and Lube Blending Plant
King Mongkut's University of Technology Thonburi	Guideline for Driving Thai Future Network
Thailand Tobacco Monopoly	The Human Resource System Upgrading
Centre for Educational Technology	On-demand Internet Broadcasting System for Educational TV program : <a href="http://www.etvthai.tv">www.etvthai.tv</a> (Maintenance and Development)

## Education Sector (Continued)

Organization	Project
Thai Health Promotion Foundation	Preventive Measures for the Rights Violation of Older Persons
Sisaket Primary Educational Service Area Office 1  	Empowerment of English Language Proficiency for Student Preparation to become ASEAN Community Citizen // Activity : Workshop for English Teacher Potential Enhancement Using English Language Learning Software for Prathomsuksa and Mattayomsuksa Students Learning Quality Development
Office of The Basic Education Commission	Development of Geographic Information System for Education
Thai Listed Companies Association	Feasibility study of replacing the motion units by the industrial parts: Case Study the Anti-aircraft Artillery Bofors 40 L70
The National Health Commission Office	The Rights and Duties in Respect of Health under National Health Act, B.E. 2550
Food and Drug Administration	Alternative Research Project on Quality Stability of Meat Product (Luk Chin) Fiscal of 2017
	The Satisfaction Survey of the Clients Recieved from the Food and Drug Administration Thailand
National Innovation Agency (Public Organization) (NIA)	An Analysis of Regional Plan and Development strategies of Innovation Districts in Bangkok and Eastern Region
The Office of Knowledge Management and Development	The Study of Guidelines For Establishment Of National Knowledge Center In Thailand Context

## Education Sector (Continued)

Organization	Project
Office of the Permanent Secretary, Ministry of Tourism and Sports	Data Development for Sport Industry in Thailand
Office of Permanent Secretary Ministry of Commerce	IT And Security Consulting Project For Ministry Of Commerce 2017
Geo-Informatics and Space Technology Development Agency	The Law Establishing the National Space Authority of Thailand
 National Science and Technology Development Agency	The allergic and irritant skin test of hair serum containing Tea Seed Oil in healthy volunteers
	Irritant and allergic reactions to skin of shampoo and conditioner in healthy volunteers
	The Clinical efficacy of Products containing Silk-Sericin in healthy volunteers
	The clinical safety on skin of products containing Silk-Sericin in healthy volunteers
Roi Et Provincial Office of Local Administration	The Project of Integrity and Transparency Assessment in the Implementation of the Local Administrative Organizations in Roi-et Province of Fiscal year 2017
National Health Security Office	Analyzing Public Heary on the draft of National Healt Security Bill
Department of Local Administration	Training and Operational Development Program for local administrative personnel Course : The Future of Thai Local Administration under New Constitution



# Telecommunication Sector




Organization	Project
Department of trade negotiators	ICT Consulting Project
Department of Rural Roads	Development of Cloud Computing System for Department of Rural Roads
Department of Physical Education	Computer System for License and Election of the Standard Committee of Coach and Referee
Department of Local Administration	Digital Action Plan for Department for Local Administration for the fiscal year 2018-2021
Department of Industrial Promotion	SME's Entrepreneurial Empowerment With ERP-by-DIP Systems Within SMEs' Competency Development Program
The Metropolitan Electricity Authority	Metropolitan Electricity Authority ICT User Needs and Satisfaction Survey in 2017
Provincial Electricity Authority	PEA Smart Plus Project
Global Information Co., Ltd.	Warehouse Software Development for Imagery Intelligence
	Analysis and Design Warehouse systems for Imagery Intelligence
Health Systems Research Institute	Automated Screening System for Diabetic Retinopathy and Age-related Macular Degeneration Patients
Office of Government Pension Fund, Department of Local Administration	The analysis and design of an information system and database for supporting the operations of the local personal pension fund

## Telecommunication Sector (Continued)

Organization	Project
National Village and Urban Community Fund Office	Analysis, Improvement and Development of Data Base and Report System for Village and Urban Community Fund
Office of The National Broadcasting and Telecommunications Commission	Cyber Security Treats Protection Training
	Feasibility Study of Internet and Telecommunication Infrastructure status
	A Study Guideline to the further use of Cellular Services Information for corporate governance
	The Strengthening of Consumer network in Broadcasting business
	A Survey and study of Service charge structure and revenue level from television business in Thailand
	Survey and Detail Design of provisioning mobile and hi-speed Broadband Services in rural area
	The study on Content regulatory Approach in the era of media convergence
	The study and analysis of evaluating the quality of user experience on 3G and 4G mobile phone network



## Telecommunication Sector (Continued)

Organization	Project
	Assessment of the awareness and understanding toward mobile network providing in range of 1800 MHz and 900 MHz for general consumers
	Project: Site survey and detail design, implementing mobile services and high-speed internet services in rural areas. approx. 4000 villages
Office of Natural Resources and Environmental Policy and Planning	Development of Thailand's Greenhouse Gas Emissions Inventory System Project : TGEIS
Social Security Office	Hire consultants to study image and media in public relations of proactive social security
Office of the Permanent Secretary, Ministry of Labour	Digital Action Plan for Ministry of Labour and Office of the Permanent Secretary Ministry of Labour 5-Years (2017-2021)
Electronic Transactions Development Agency (Public Organization) : (ETDA))	A Study on e-commerce operators data to provide recommendations on how to improve online trading
Thai Industrial Standards Institute	Consultation Project for Thai Industrial Standards Institute 5-Years Digital Operational Plan Development (2018-2022)
Office of the Royal Society	Research and Development of an Online Examination System for Thai Language Teachers
Thailand Greenhouse Gas Management Organization (Public Organization)	Remote Sensing

# Agriculture And Rural Development Sector



Organization	Project
Department of Business Development	Potential Development Project for Thai Business to online marketing (offline 2 online B2C)
Department of Industrial Promotion	Promoting SMEs through Social Media for Competency Development in Marketing and Branding by DIP Systems Within SMEs' Competency Development Program
	SME Competencies Development Using Business Intelligence (BI)
Division II of Sectoral Industries Development	Herbal Promotion Activities (Cluster), Enhance the Potential of Herbal SMEs to Raise the Thai Herbal Industry for Small and Medium Enterprises (SMEs) Target Group, 4 Community Enterprises
Geo-Informatics and Space Technology Development Agency	Technical Consultant on Geo-Informatics Service for Agriculture
	Creating a visualizing system for policy impact analysis
	Technical Consultant on Geo-Informatics Service for Agriculture



## Population Sector


Organization	Project
Department of land transport	In depth Accident Investigation course and Human Resource Development for Road Safety
Department of Children and Youth	Monitoring of Fiscal year 2017 Grant for Newborn Project
Department of Social Development and Welfare	The Consultant Employment Project to Drive Work under the Control of Begging Act, B.E. 2559 (2016)
National Housing Authority	The Study Project on Housing Demand Forecast of Thailand (2017-2037)
Krung Thai Bank Public Company Limited	Customer Need Analysis
	Customer Need Analysis
Defence Technology Institute (Public Organization)	Public Perception, Attitude, and Image of Defense Technology Institute (Public Organization) Survey and Service Satisfaction of the DIT's Clients and the Stakeholders Survey
Pid Thong Royal Initiative Discovery Foundation	PR campaign for research on development of guidelines for driving the sustainable area development in the second stage conceived by His Majesty King Bhumibol Adulyadej

## Population Sector (Continued)

Organization	Project
	Development of guidelines for driving the new theory of the area development in the second stage based on philosophy of sufficiency economy
Thai Health Promotion Foundation	Promoting the Development and Monitoring of School Operations for Older Persons
	Evaluation of Homeless Quality of Life Development Strategic Plan (2015-2017)
Office of Justice Affairs	Research on Development inquiry system of corruption and Human trafficking in Persons cases in order to harmonized to the process of Inquisitorial under the Act of corruption Procedure B.E. 2559 and the Act of Trafficking in Person B.E. 2559
	Human Rights
Office of the Public Sector Development Commission	Anti-Corruption Public Relations campaign
Office of Permanent Secretary Ministry of Finance	MOF's THE TRIANGLE OF CHANGE
Anti-Money Laundering Office (AMLO)	An Evaluation Report on FATF of AMLO, year 2017
Department of Local Administration	Training and Operational Development Program for local administrative personnel Course : The Future of Thai Local Administration under New Constitution



## Energy Sector

Organization	Project
	Investment for Improving the machine and equipment for energy conservation, Group 2 (Central, North, Northeast)
	Energy Efficiency in Vimanmek Palace
	Investment Support for Equipment in Public Hospitals Phase II
	Development of System for registration training and proficiency testing of Energy saving auditor
	Energy Conservation and Renewable Energy Development in the Court : Phase III
Department of Public Works and Town & Country Planning	Development of Analysis and Design Techniques of Vibration Control Devices to Dissipate Energy from Earthquake and wind for Buildings
Princess of Naradhiwas University	Energy Efficiency in Government Agency- Princess Naradhiwas University, Naradhiwas Province
Hatyaiwittayalai somboonkulkanya School	Energy Efficiency in Government Agency- Hatyaiwittayalai Somboonkulkanya School Songkhla Province
National Science and Technology Development Agency	improvement of corrosion resistance of stainless steel by coating graphene and graphene composites for platelike electrode in fuel cell battery and supercapacitor
	Maximum Installed Generation Capacity of Solar Generation in Thailand by Considering Frequency Response

## Urban Development Sector



Organization	Project
Department of Older Persons	Evaluation of Department of Older Persons's Implementation and Budgeting Plan 2017
The Comptroller General's Department	Assurance Team Project of Construction Sector Transparent Initiative CoST
Excise Department	Research Project on the English Translation of the new Excise Act and Its Commentaries
Expressway Authority of Thailand (EXAT)	Inspection of tension in tendons of segmental bridge girder of the pier number 11/22 of the Burabhavithi express way
Mass Rapid Transit Authority of Thailand	Property Usage Compensation Criteria : MRTA
Map Ta Phut municipality	The Promotion of Community Capacity Building Development and Community Economy towards Sufficiency Economy Philosophy
Western Digital (Thailand) company Limited	Vibration Model and Optimization for HAS Automation line
Siam Piwat Co., Ltd.	Sustainable Shopping Mall Management
Elite Holiday & Agency (Thailand) Co., Ltd.	Musical performances for our beloved late King Bhumibol Adulyadej
Foundation of Thai Gerontology Research and Development institute	Driven Mechanism for Senior Citizens Clubs in Promoting the Status and Roles for Older Persons

## Urban Development Sector (Continued)

Organization	Project
Thailand Creative & Design Center	TYPES OF BUSINESSES AND RENTAL SPACE DATABASE IN CHAREON KRUNG-KLONGSAN
	The Study of Customer Need In Physical and Digital Forms, Website, Online Transaction, And Service's Image of POSTAL Services
Office of The National Broadcasting and Telecommunications Commission	The Research on Evaluation of Content Quality of Terrestrial Digital Television
Office of Natural Resources and Environmental Policy and Planning	The Project of Conservation and Development of the Old Cities : Scoping the Old Cities Area
National Innovation Agency (Public Organization) (NIA)	Pattaya Innovation District Development
	Innovation Network Development
Office of the Permanent Secretary	Study and survey for public transport infrastructure assessment and universal design suggestions for better a ccessibility of disabled people, child and elderly-phase 3
Office of the Permanent Secretary, Ministry of Justice	Recidivism Survey of the Inmates participated in the Inspire Project's Activities
Electronic Transactions Development Agency (Public Organization): (ETDA)	Training : Digital Law and Security
Office of Small and Medium Enterprises Promotion	SME Strong/Regular Level

## Urban Development Sector (Continued)

Organization	Project
Chiang Rai Provincial Industry Office	Lampang, the ceramic city project. The activities of quality and product development, in order to enhance the value of ceramic products. Lampang Provincial Industry office
Bangkok Mass Transit Authority (BMTA)	Feasibility study of Bangkok Project
	Feasibility Study of BMTA Mean Buri Project
Foundation For Industrial Development National Food Institute	Eco Products



## Health Sector

Organization	Project
Department for Development of Thai Traditional And Alternative Medicine Ministry of Public Health	Monitor the safety of using herbal medicines in public health services in order to enter national essential drug 2017
Emergency Medical Institute of Thailand	Project of Career Path for the National Institute for Emergency Medicine
Thailand Institute of Occupational Safety and Health (Public Organization)	Promotion Research on Occupational Safety and Health in Workplace Environment
Thai Health Promotion Foundation	Evaluation of Gambling Harm Reduction Program
National Science and Technology Development Agency	Development of rapid diagnosis method for strain characterization and identification of epidemic Enterobacteriaceae



## Environment Sector

Organization	Project
Department of Disaster Prevention and Mitigation	Community-Based Flood Risk Management and Disaster Response in the Chao Phraya Basin
Department of Industrial Works	Cleaner Technology Codes of Practice : Ready Meals Industry
Expressway Authority of Thailand (EXAT)	The Study on Environmental Monitoring Program of Expressways in Bangkok and Vicinity in Fiscal Year 2017
Metropolitan Waterworks Authority	Study of Apparent Losses due to Meter Inaccuracy
Bangkok Synthetics Co., Ltd.	Carbon Footprint for Organization : Bangkok Synthetics Company Limited
Gulf JP KP1 Company Limited	Carbon Footprint for Organization: Gulf JP KP 1 Company Limited
Gulf JP KP2 Company Limited	Carbon Footprint for Organization Verification
Gulf JP NK 2 Company Limited	Carbon Footprint Verification Project: Power Plant Nhong Kae 2 (Gulf JP NK2 Company Limited)
GULF JP NLL COMPANY LIMITED	Carbon Footprint Verification Year 2017
Bangkok Airways Public Co., Ltd.	Carbon Footprint for Organization Verification Project Bangkok Airways Public Company Limited
	Carbon Footprint for Organization Verification : Bangkok Airways Public Company Limited



## Environment Sector (Continued)

Organization	Project
TOA Paint (Thailand) Company Limited	Carbon Footprint for Organization Verification Project: TOA Paint (Thailand) Company Limited
Nawaplastic Industries Company Limited	Verification of Carbon Footprint for Organization (CFO)
Bangkok Aviation Fuel Services Public Company Limited	Carbon Footprint for Organization Verification 2016 : Bangkok Aviation Fuel Service Public Company Limited (BASF)
PrukSA Real Estate Public Company Limited	Carbon Footprint for Organization Verification: PRUKSA Precast Concrete Factory Lam Lukka and PRUKSA Precast Concrete Factory Nawanakorn
Map Ta Phut Tank Terminal Company Limited	Carbon Footprint for Organization Verification: Map Ta Phut Tank Terminal Co., Ltd.
Rayong Terminal Co., Ltd.	Carbon footprint for Organization Verification: Rayong Terminal Company Limited
Advanced Wireless Network Co., Ltd.	Carbon Footprint for Organization Verification Project: Advanced Info Services Public Company Limited
Utokapat Foundation under Royal Patronage of H.M. the King	Evaluation and Monitoring of Community-based natural resource management performance (His Majesty The King's Initiative Project : Southern area)
National Metal and Materials Technology Center	Interview Questionnaire
Plastics Institute of Thailand	Encapsulation of as-extraction Derris elliptica Benth into polylactic acid for insect repellence film : Structural elucidation and kinetic approach

## Environment Sector (Continued)

Organization	Project
	Development and properties of Biodegradable Nanocomposite Sheet Prototype Based Poly (lactic acid) and Poly (butylenes succinate) Blends/Modify Zinc oxide for Respiratory Disposables mask
	Preparation and Characterization of Anti-microbial Film from Nano Titanium Dioxide Based Polypropylene/Poly (Lactic Acid) Blend for Urine Drainage Bag Prototype
	Development of cellulose based composite for membrane material in industrial wastewater treatment
Management System Certification Institute	Thailand Voluntary Emission Trading Scheme: Thailand V-ETS: Verification Project 2017
Office of Natural Resources and Environmental Policy and Planning	Thailand's Policy Implementation on Nationally Determined Contribution (NDC)
National Science and Technology Development Agency	Carbon Footprint for Organization: National Science and Technology Development Agency (NSTDA)
Research Unit for Energy Economic & Ecological Management, Chiang Mai University	Supply Chain De-carbonization Project 2017
Thailand Textile Institute	Green Productivity in Textile Industry by using clean Technology



## Industry Sector

Organization	Project
Department of Alternative Energy Development and Efficiency Ministry of Energy	Energy efficiency promotion by energy audit mechanism project (group 2 : north east and south region)
Department of Industrial Works	Safety management for industrial chemical in Thailand (funded from budget for industrial safety and environment management)
Department of Industrial Promotion	SME Business Potential Analysis for Credit Approval for Business Rehabilitation
	Big Data Development for Office of Strategy Management, Department of Industrial Promotion
	Service Development of Business Service Center for SMEs and SMCE (Small and Micro Community Enterprise)
	Monitoring and Evaluation of Department of Industrial Promotion Project (Budget year 2017)
Division II of Sectoral Industries Development, Department of Industry Promotion	Activities: The link with e-commerce systems and Produce media for publishing products under the product development project related to the market demand. Department of Industrial Promotion, Fiscal Year 2017
T.C. Pharmaceutical Industries Company Limited	Carbon Footprint for Organization verification Project 2017 T.C. Pharmaceutical Industries Company Limited

## Industry Sector (Continued)

Organization	Project
PTT Global Chemical Public Company Limited	The Structure elucidation of organic compound by spectroscopy method
Singha Property Development Co., Ltd.	WIND LOAD STUDY FOR SINGHA COMPLEX CONDOMINIUM PROJECT BY WIND TUNNEL TEST
Sermsuk Public Company Limited	Carbon Footprint for Organization Verification : Sermsuk Public Company Limited
Ananda MF Asia Rama 9 Company Limited	WIND LOAD STUDY FOR TULIP BUILDING PROJECT BY WIND TUNNEL TEST
Design & Engineering Consulting Service Center, National Science and Technology Development Agency	Consultant of Design and Engineering Consulting Service Center
Industry Promotion Center Region 1	Industrial Supply Chain Efficiency Improvement
Industry Promotion Center Region 6	DIP Stars
	Industrial Cluster Preparation Activity Linked to Cassava Super Cluster Industrial Network Creation and Development and Industrial Cluster Project Industrial promotion Center Region6, Department of Industrial Promotion, Fiscal year 2017
Thailand Creative & Design Center	THE STUDY OF THAILAND'S DESIGN INDUSTRY POTENTIALS

## Industry Sector (Continued)

Organization	Project
Plastics Institute of Thailand	Cellulose based hydrogel composite for medical and phamarcertical technology
	Development of cellulose base composite for electronic substrate
Kasetsart University Research and Development Institute	The Production of Ready-to-Eat Healthy Chinese Sausage
The Federation of Thai Industries	Carbon Footprint for Industrial Organizations Project Phrase 6
Thai Industrial Standards Institute	Enhancing the Role of Thailand in the International Standardization Forum: TIS9999 as the ISO new work proposal
Chiang Rai Provincial Industry Office	Assessment of the Enhancing market-sharing for a regional Agro-Industrial networking Project
The Office of Strategy Management, Department of Industrial Promotion	SMEs Rescue Center 2017
Thailand Textile Institute	Market Surveying
Foundation For Industrial Development National Food Institute	Enhancing Thai Halal Food Plant Layout
	Increasing Competitiveness of Thailand Eco-Food Industry under Increasing productivity of Food and agro-processing 2017 Project

## Construction Industry Development Sector

Organization	Project
Marine Department	The Feasibility Study and Detailed Design for The Improvement and Expansion of P.P. Island Port in Krabi Province
Department of Rural Roads	Development of Bridge Model and Structural Evaluation System : Phase II
Expressway Authority of Thailand (EXAT)	A Study on Vibration Impacts to Building, LadLoung Community, Samud Prakarn Provence, Kanchanaphisek Expressway (Bangpee-Suksawat)
	Kanchanapisek bridge inspection manual
	Consulting project to study an implementation plan of the second stage of expressway (Sri-Rat expressway including section D) subsequent to the expiration of the investment contract
KASKAL Co., Ltd.	INSPECTION AND EVALUATION OF STRUCTURAL AND FUNCTION PERFORMANCE OF FACADE SYSTEM FOR ROYAL THAI AIDE-DE-CAMP DEPARTMENT AND OTHERS
Noble Development Public Co., Ltd.	WIND LOAD STUDY FOR NOBLE WITTHAYU PROJECT BY WIND TUNNEL TEST
BTS Assets Co., Ltd.	WIND LOAD STUDY FOR MORCHIT BUILDING PROJECT BY WIND TUNNEL TEST
Frametek Window and Door Co., Ltd.	WIND LOAD STUDY FOR ASHTON SILOM PROJECT BY WIND TUNNEL TEST
MALEE FACADE ENGINEERING SERVICE CO., LTD.	WIND LOAD STUDY FOR ATHENA BUILDING PROJECT BY WIND TUNNEL TEST





## Construction Industry Development Sector (Continued)

Organization	Project
WHIZDOM LANDMARK CORPORATION LIMITED	WIND LOAD STUDY FOR WHIZDOM 101 COMMERCIAL BUILDING PROJECT BY WIND TUNNEL TEST
Aeronautical Radio of Thailand Ltd.	Structural Assessment of 30 Air traffic Control Towers
Sansiri Public Company Limited	Wind Load Study For The Line Sathorn Building Project By Wind Tunnel Test
	Wind Load Study for S12 Project by Wind Tunnel Test
Eastern Star Real Estate Public Company Limited	Wind Load Study For The Starview 2 Building Project By Wind Tunnel Test
EPSILON.CO., LTD.	Analysis and Design of Aerodynamic of Cable-Stayed Bridge by Sectional Model Test in Wind Tunnel
SCG Cement-Building Materials Co., Ltd.	Thailand Construction Product and Equipment Market Size
Hansa Meyer Global Transport Co., Ltd.	Structural Evaluation of highway bridges

## Water Supply and Sanitation Sector

Organization	Project
Department of Groundwater Resources	Development of Five-Year Strategic Public Relations Plan for the Groundwater Fund

## Miscellaneous Sector

Organization	Project
Industrial Estate Authority of Thailand	Satisfaction and Engagement Survey of IEAT Employees
Mass Rapid Transit Authority of Thailand	Customer Satisfaction & Requirement Survey & Analysis : Blue & Purple Line for MRTA
Kins Auto Design Co., Ltd.	Automated Detection of Authentic and Counterfeit Rolex Submariner on Smartphone
Top Trend Manufacturing Co., Ltd.	Human Potential Development for Increasing Effective Work
Bangchak Petroleum Public Company Limited	Principle of Management & Marketing for Local Gas Station (Triple M, Batch#4)
ECO LAB CO., LTD.	Employee On-boarding Survey
IRPC Public Company Limited	Customer Relationship Management For Salesperson
Playing cards Factory	Capacity Building Project for Executives
Thailand Tobacco Monopoly	Activated carbon from dried hemp stem for the adsorption of nicotine and tar from mainstream smoke of cigarettes compared with carbon nano tube filter and general activated carbon filter
	Development of Insecticide Technology for Cigarette Beetles using Active Compounds from Plants
	Utilization of Active Compounds from Hemp Stems for Cigarette Value-added Applications



## Miscellaneous Sector (Continued)



Organization	Project
Thailand Professional Qualification Institute (Public Organization)	The Preparation for Fashion Design's Competency Assessment Tools for The Fiscal Year of 2017
Office of the Public Sector Development Commission	Government Innovation Lab: a strategy-driven project for community empowerment and economic sustainability through provincial and regional areas (Activity 3)
	Restructuring and Reorganizing the Thai Provincial Administration for Enhancing the Strategic Capacity under the Thailand 4.0 Framework
Office of the Permanent Secretary, Ministry of Social Development and Human Security	Follow up and Evaluation of Policies of the Ministry of Social Development and Human Security Fiscal year 2017
Office of the Permanent Secretary, Ministry of Energy	Training Roadmap Design & Development for Ministry of Energy
Electronic Transactions Development Agency (Public Organization):(ETDA)	Consultancy Project for Cyber Security Expert development under CERT Readiness Project
	Course Development, Training and Seminar to Enhance Readiness of Electronic Document in Import/Export
National Science and Technology Development Agency	Association of ABO blood group system and ABO polymorphisms with angiotensin converting enzyme activity in Thai population

Independent  
Auditor's Report  
(TU-RAC)



# Independent Auditor's Report

To the Board of Director of Thammasat University Research and Consultancy Institute

## Opinion

I have audited the accompanying financial statements of **Thammasat University Research and Consultancy Institute (TU-RAC)** which comprise the statement of financial position as at September 30, 2017 the related statement of revenues and expenditures and cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory information.

In my opinion, the aforementioned financial statements present fairly, in all material respects, the financial position of **Thammasat University Research and Consultancy Institute** as at September 30, 2017, and the revenues and expenditures for the year then ended in accordance with Financial Reporting Standards for Non-Publicly Accountable Entities.

## Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of TU-RAC in accordance with the Federation of Accounting Professions under the Royal Patronage of his Majesty the King's Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

## Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Thai Financial Reporting Standards for Non-Publicly Accountable Entities, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing TU-RAC's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the TU-RAC to cease operations, or has no realistic alternative but to do so.

## Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to

issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Thai Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Standards on Auditing, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of TU-RAC's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on TU-RAC's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause TU-RAC to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with management regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

*Panarat Panmanee*

(Mrs. Panarat Panmanee)  
Certified Public Accountant (Thailand)  
Registration No. 2870

17 Soi 7 Seri 8, Suan Luang, Bangkok.  
October 18, 2017



STATEMENT OF FINANCIAL POSITION

AS AT September 30, 2017

(Unit : Baht)

	Note	2017	2016
<b>ASSETS</b>			
<b>CURRENT ASSETS</b>			
Cash and cash equivalents	3	168,873,055.42	172,845,414.79
Advance researcher		6,850,900.00	3,215,000.00
Accrued research receivable		308,141,195.20	173,314,973.38
Accrued fee research receivable		33,556,297.28	27,483,291.96
Retaintion receivable		8,943,730.71	12,198,190.86
Other current assets		608,597.20	422,229.39
<b>TOTAL CURRENT ASSETS</b>		<b>526,973,775.81</b>	<b>389,479,100.38</b>
<b>NON-CURRENT ASSETS</b>			
Deposit Pledged by Guarantee Obligation	4	11,233,609.25	7,576,419.21
<b>TOTAL NON-CURRENT ASSETS</b>		<b>11,233,609.25</b>	<b>7,576,419.21</b>
<b>TOTAL ASSETS</b>		<b>538,207,385.06</b>	<b>397,055,519.59</b>

The accompanying notes are an integral part of these financial statements.

THAMMASAT UNIVERSITY RESEARCH AND CONSULTANCY INSTITUTE

STATEMENT OF FINANCIAL POSITION (Continued)

AS AT September 30, 2017

		(Unit : Baht)	
	Note	2017	2016
<b>LIABILITIES AND FUNDS</b>			
<b>CURRENT LIABILITIES</b>			
Accrued research expenses		354,308,117.72	227,237,854.82
Accrued bonus		1,017,898.04	1,424,410.37
Other current liabilities	5	4,033,103.33	6,929,097.90
Total current liabilities		359,359,119.09	235,591,363.09
<b>TOTAL LIABILITIES</b>		<b>359,359,119.09</b>	<b>235,591,363.09</b>
<b>FUNDS</b>			
Capital fund	6	1,115,070.00	1,115,070.00
Accumulated revenues over expenses	7	177,733,195.97	160,349,086.50
Total funds		178,848,265.97	161,464,156.50
<b>TOTAL LIABILITIES AND FUND</b>		<b>538,207,385.06</b>	<b>397,055,519.59</b>

The accompanying notes are an integral part of these financial statements.

THAMMASAT UNIVERSITY RESEARCH AND CONSULTANCY INSTITUTE

STATEMENT OF REVENUES AND EXPENSES

FOR THE YEAR ENDED SEPTEMBER 30, 2017

(Unit : Baht)

	Note	2017	2016
<b>REVENUES</b>			
Research income		968,744,097.48	668,328,772.81
Research fee income		92,015,049.64	78,298,057.20
Subsidy income		-	389,200.00
Other income		621,595.15	610,595.94
<b>TOTAL REVENUES</b>		<b>1,061,380,742.27</b>	<b>747,626,625.95</b>
<b>EXPENSES</b>			
Research payment		968,744,097.48	668,328,772.81
Operating expenses	8	75,942,147.44	76,863,135.62
<b>Total Expenses</b>		<b>1,044,686,244.92</b>	<b>745,191,908.43</b>
<b>NET REVENUES OVER EXPENSES</b>		<b>16,694,497.35</b>	<b>2,434,717.52</b>

The accompanying notes are an integral part of these financial statements.

THAMMASAT UNIVERSITY RESEARCH AND CONSULTANCY INSTITUTE

CASH FLOWS STATEMENTS

FOR THE YEARS ENDED SEPTEMBER 30, 2017

	(Unit : Baht)	
	2017	2016
<b>Cash Flows From Operating Activities</b>		
Net revenues over expenses	16,694,497.35	2,434,717.52
Adjustment cash received (used) from operating activities		
Decrease (Increase) advance researcher	(3,635,900.00)	1,410,000.00
Decrease (Increase) accrue research income	(134,826,221.82)	29,234,164.04
Decrease (Increase) accrued research fee income	(6,073,005.32)	(1,990,882.50)
Decrease (Increase) Retaintion receivable	3,254,460.15	(6,407,412.29)
Decrease (Increase) current asset	(186,367.81)	71,855.24
Decrease (Increase) Non-current asset	(3,657,190.04)	(101,428.21)
Increase (Decrease) researcher payment	127,070,262.90	(36,296,958.44)
Increase (Decrease) accrued bonus	(406,512.33)	405,794.03
Increase (Decrease) other current liabilities	(2,895,994.57)	1,434,945.47
<b>Net cash from operating activities</b>	<b>(4,661,971.49)</b>	<b>(9,805,205.14)</b>
Adjustment accumulated revenues over expenses Increase (decrease)	689,612.12	(360,110.83)
<b>Net Cash And Cash Equivalents Increase (Decrease)</b>	<b>(3,972,359.37)</b>	<b>(10,165,315.97)</b>
Cash And Cash Equivalents At The Beginning Of The Period	172,845,414.79	183,010,730.76
Cash And Cash Equivalents At The Ending Of The Period	168,873,055.42	172,845,414.79

The accompanying notes are an integral part of these financial statements.

NOTES TO FINANCIAL STATEMENTS

FOR THE YEAR ENDED SEPTEMBER 30, 2017

## 1 GENERAL INFORMATION

The TU-RAC capital funds consists of two sourced: TU-RAC sponsor and Research fund. The funds, include its interest, are generally used for all the institute's purposes in order to accomplish the TU-RAC'S mission.

## 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

### 2.1 The Basis of Financial Statement Preparation

- In order to prepare the financial statements to comply with generally accepted accounting standards, The TU-RAC Institute's management had to make some estimated and suppositions which may have an effect on the amount shown for revenues, expenses, assets and liabilities and also on the disclosures concerning assets and contingent liabilities, therefore the actual result may differ from the estimated amount.
- The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies.
- For the convenience of the user, an English translation of the financial statements has been prepared from the statutory financial statements that are issued in Thai.

### 2.2 Revenues and Expenses

Revenues and expenses are recognized on accrual basis except interest income is recognized on cash basis.

### 2.3 Cash and Cash equivalent items

Cash and cash equivalent items include bank deposit in type of saving, current and not exceeding three-month fixed deposit with no guarantee obligation.

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE YEAR ENDED SEPTEMBER 30, 2017

2.4 A provision of liabilities

The TU-RAC Institute recognized in the balance sheet when The TU-RAC Institute has a present legal or constructive obligation as a result of a past event, and it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. If the effect is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and where appropriate, the risks specific to the liability

3 CASH AND CASH EQUIVALENTS

	(Unit : Baht)	
	2017	2016
Petty cash	6,168.00	3,926.00
Bank Deposit		
Saving Account	168,866,887.42	172,841,488.79
Total	168,873,055.42	172,845,414.79



NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE YEAR ENDED SEPTEMBER 30, 2017

4 DEPOSIT PLEDGED BY GUARANTEE OBLIGATION

As of September 30, 2017 and 2016 The TU-RAC Institute had Fix deposit amount 11,233,609.25 Baht and 7,576,419.21 Baht with in TMB bank public company limited. Past of these account be the pledges for bank guarantee which issued by the TMB bank related with normal normal business obligation as fallow:

	(Unit : Baht)	
	2017	2016
4.1 L/G Department of Drainage and Sewerage	129,948.94	129,948.94
4.2 L/G Chachoengsao Provincial Industry Office	-	10,000.00
4.3 L/G Bureau of Community Industries Development	2,005,000.00	1,383,600.00
4.4 L/G Marine Department	695,990.00	-
4.5 L/G PTT Public Company Limited	793,000.00	-
4.6 L/G Office of Transport and Traffic Policy and Planning	-	528,262.50
<b>Total</b>	<b>3,623,938.94</b>	<b>2,051,811.44</b>

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE YEAR ENDED SEPTEMBER 30, 2017

5 OTHER CURRENT LIABILITIES

	(Unit : Baht)	
	2017	2016
5.1 Accrued facilities	574.59	-
5.2 Accrued audit fee	80,000.00	80,000.00
5.3 Accrued communication business oversea	416,213.00	635,060.32
5.4 Accrued transportation expenses	49,013.00	49,945.81
5.5 Accrued ACF sponsor	-	1,157,290.00
5.6 Accrued fee payment	1,042,457.09	2,368,508.17
5.7 Accrued hire expenses	2,000.00	-
5.8 Accrued seminar expenses	405.00	40,305.40
5.9 Accrued training expenses	11,770.00	13,050.00
5.10 Accrued fee charge	8,184.90	5,815.00
5.11 Accrued research text	2,374,780.00	2,563,840.00
5.12 Other expenses	47,705.75	15,283.20
<b>Total</b>	<b>4,033,103.33</b>	<b>6,929,097.90</b>

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE YEAR ENDED SEPTEMBER 30, 2017

6 CAPITAL FUNDS

	(Unit : Baht)	
	2017	2016
6.1 Fund from sponsored by TU	100,000.00	100,000.00
6.2 Fund from research fund	1,015,070.00	1,015,070.00
Total	1,115,070.00	1,115,070.00

7 ACCUMULATED REVENUES OVER EXPENSES

	(Unit : Baht)	
	2017	2016
Beginning accumulated revenues over expenses	160,349,086.50	158,274,479.81
<u>Add</u> Adjustment last year	689,612.12	(360,110.83)
	161,038,698.62	157,914,368.98
<u>Add</u> Net revenues over expenses	16,694,497.35	2,434,717.52
Ending accumulated revenues over expenses	177,733,195.97	160,349,086.50

THAMMASAT UNIVERSITY RESEARCH AND CONSULTANCY INSTITUTE

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE YEAR ENDED SEPTEMBER 30, 2017

8 OPERATING EXPENSES

	(Unit : Baht)	
	2017	2016
8.1 Salary expenses	5,636,120.00	5,059,212.07
8.2 Administrative for director	600,000.00	600,000.00
8.3 Secretary title expenses	234,000.00	234,000.00
8.4 Audit fee	80,000.00	80,000.00
8.5 Bonus for director	752,500.00	896,512.37
8.6 Pre-research proposal expenses	55,824.00	107,095.00
8.7 Other charge expenses	401,988.16	266,701.00
8.8 Staff seminar and training expenses	254,403.00	83,902.00
8.9 Welfares	373,182.20	355,862.60
8.10 TU Subsidy	60,000,000.00	60,000,000.00
8.11 Souvenir expenses	178,989.17	112,385.52
8.12 Meeting expenses	115,000.00	93,000.00
8.13 Hire expenses	209,100.00	208,705.00
8.14 TU-RAC seminar expenses	247,908.36	260,023.10
8.15 Annual report fee	264,800.00	259,600.00
8.16 Bonus expenses	2,177,711.00	1,803,660.00
8.17 ACF sponsor	860,100.00	1,843,745.00
8.18 Provident fund Susidy	1,057,200.00	1,244,900.00

THAMMASAT UNIVERSITY RESEARCH AND CONSULTANCY INSTITUTE

NOTES TO FINANCIAL STATEMENTS (Continued)

FOR THE YEAR ENDED SEPTEMBER 30, 2017

	(Unit : Baht)	
	2016	2015
8.19 Office supplies expenses	163,735.50	268,044.03
8.20 Utilities expenses	79,814.13	90,218.85
8.21 Transportation expenses	663,253.49	699,412.01
8.22 Business travelling oversea	875,478.64	1,594,158.90
8.23 Researcher's day expenses	115,620.00	144,852.00
8.24 Cleaning expenses	130,429.04	122,141.67
8.25 Other expenses	414,990.75	435,004.50
Total	<u>75,942,147.44</u>	<u>76,863,135.62</u>

Independent  
Auditor's Report  
(Asset Compensation Fund  
of TU-RAC)





# Independent Auditor's Report

To the Board of Director of Asset Compensation Fund of Thammasat University Research and Consultancy Institute

## Opinion

I have audited the accompanying financial statements of **Asset Compensation Fund of Thammasat University Research and Consultancy Institute (ASS-RAC Fund)** which comprise the statement of financial position as at September 30, 2017 the related statement of revenues and expenditures and cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory information.

In my opinion, the aforementioned financial statements present fairly, in all material respects, the financial position of **Asset Compensation Fund of Thammasat University Research and Consultancy Institute** as at September 30, 2017, and the revenues and expenditures for the year then ended in accordance with Financial Reporting Standards for Non-Publicly Accountable Entities.

## Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the ASS-RAC Fund in accordance with the Federation of Accounting Professions under the Royal Patronage of his Majesty the King's Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

## Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Thai Financial Reporting Standards for Non-Publicly Accountable Entities, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the ASS-RAC Fund's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the ASS-RAC Fund to cease operations, or has no realistic alternative but to do so.

## Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to

issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Thai Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Standards on Auditing, I exercise professional judgment and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the ASS-RAC Fund's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ASS-RAC Fund's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the ASS-RAC Fund to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with management regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

*Panarat Panmanee*

(Mrs. Panarat Panmanee)  
Certified Public Accountant (Thailand)  
Registration No. 2870

17 Soi 7 Seri 8, Suan Luang, Bangkok.  
October 18, 2017

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE

STATEMENTS OF FINANCIAL POSITION

AS AT SEPTEMBER 30, 2017

(Unit : Baht)

	Note	2017	2016
<b>ASSETS</b>			
<b>CURRENT ASSETS</b>			
Cash and cash equivalents	3	20,264,422.80	19,004,620.47
Other current asset	4	-	1,158,305.20
<b>Total Current Assets</b>		<b>20,264,422.80</b>	<b>20,162,925.67</b>
<b>NON-CURRENT ASSETS</b>			
Building improvement and equipment-net	5	2,390,892.64	3,003,552.14
<b>Total Non-Current Assets</b>		<b>2,390,892.64</b>	<b>3,003,552.14</b>
<b>TOTAL ASSETS</b>		<b>22,655,315.44</b>	<b>23,166,477.81</b>
<b>LIABILITIES AND FUND</b>			
<b>CURRENT LIABILITIES</b>			
Accrued system development expenses		891,310.00	1,295,770.00
Accrued expenses	6	153,876.50	355,935.00
<b>Total Current Liabilities</b>		<b>1,045,186.50</b>	<b>1,651,705.00</b>
<b>TOTAL LIABILITIES</b>		<b>1,045,186.50</b>	<b>1,651,705.00</b>
<b>FUNDS</b>			
Capital fund		1,021,701.88	1,021,701.88
Donated fund		757,260.46	757,260.46
Accumulated revenues over expenses	7	19,831,166.60	19,735,810.47
<b>Total funds</b>		<b>21,610,128.94</b>	<b>21,514,772.81</b>
<b>TOTAL LIABILITIES AND FUND</b>		<b>22,655,315.44</b>	<b>23,166,477.81</b>

The accompanying notes are an integral part of these financial statements.

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
 RESEARCH AND CONSULTANCY INSTITUTE  
 STATEMENTS OF REVENUES AND EXPENSES  
 FOR THE YEAR ENDED SEPTEMBER 30, 2017

(Unit : Baht)

	Note	2017	2016
<b>REVENUES</b>			
TU-RAC Subsidy		860,100.00	1,843,745.00
Other income		24,007.13	23,792.82
<b>Total revenues</b>		<b>884,107.13</b>	<b>1,867,537.82</b>
<b>EXPENSES</b>			
Operating expenses	8	788,751.00	918,392.18
<b>Total expenses</b>		<b>788,751.00</b>	<b>918,392.18</b>
<b>NET REVENUES OVER EXPENSES</b>		<b>95,356.13</b>	<b>949,145.64</b>

The accompanying notes are an integral part of these financial statements.

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE

CASH FLOWS STATEMENTS

FOR THE YEAR ENDED SEPTEMBER 30, 2017

(Unit : Baht)

	2017	2016
<b>Cash Flows From Operating Activities</b>		
Net revenues over expenses	95,356.13	949,145.64
Adjustment cash received (used) from operating activities		
Depreciation-building	72,743.95	115,235.52
Depreciation-equipment	578,237.43	651,871.37
Depreciation-office equipment	20,272.12	29,925.29
Decrease (Increase) accrued income	1,157,290.00	(1,157,290.00)
Decrease (Increase) other current asset	1,015.20	(1,015.20)
Increase (Decrease) current liabilities	(606,518.50)	75,051.00
<b>Net cash from operating activities</b>	<b>1,318,396.33</b>	<b>662,923.62</b>
<b>Cash Flows From Investing Activities</b>		
Decrease (Increase) office supplies	(55,920.00)	(114,076.00)
Decrease (Increase) work in process	-	(120,000.00)
Decrease (Increase) office equipment	(2,674.00)	(3,494.00)
<b>Net cash used in investing activities</b>	<b>(58,594.00)</b>	<b>(237,570.00)</b>
<b>Net Cash and cash Equivalents Increase (Decrease)</b>	<b>1,259,802.33</b>	<b>425,362.62</b>
<b>Cash And Cash Equivalents At The Beginning Of The Period</b>	<b>19,004,620.47</b>	<b>18,579,257.85</b>
<b>Cash And Cash Equivalents At The Ending Of The Period</b>	<b>20,264,422.80</b>	<b>19,004,620.47</b>

The accompanying notes are an integral part of these financial statements.

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE  
NOTES TO FINANCIAL STATEMENTS  
FOR THE YEAR ENDED SEPTEMBER 30, 2017

## 1 GENERAL INFORMATION

The ASS-RAC Fund, have purpose to maintenance, renovate or repair the ASS-RAC Fund's building and equipments. The funds, include its interest, are generally used for all the ASS-RAC Fund's purposes in order to accomplish the ASS-RAC Fund's mission.

## 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

### 2.1 The Basis of Financial Statement Preparation

- In order to prepare the financial statements to comply with generally accepted accounting standards, The ASS-RAC Fund's management had to make some estimated and suppositions which may have an effect on the amount shown for revenues, expenses, assets and liabilities and also on the disclosures concerning assets and contingent liabilities, therefore the actual result may differ from the estimated amount.
- The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies.
- For the convenience of the user, an English translation of the financial statements has been prepared from the statutory financial statements that are issued in Thai.

### 2.2 Revenues and Expenses

Revenues and expenses are recognized on accrual basis.



ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE  
NOTES TO FINANCIAL STATEMENTS (Continued)  
FOR THE YEAR ENDED SEPTEMBER 30, 2017

2.3 Cash and Cash equivalent items

Cash and cash equivalent items include bank deposit in type of saving, current and not exceeding three-month fixed deposit with no guarantee obligation.

2.4 Building Improvement and Equipment and Depreciation

- Building Improvement, Equipments are record at cost on date the transaction occur after deducting accumulated depreciation. Depreciations are calculated on a straight line method based on their approximate useful life as follows:

Building Improvement	10	Year
Office Equipment	5	Year
Equipment	5	Year

- Gains and losses on disposals are determined by comparing proceeds with the carrying amount and are included in operating profit.
- Expenditure incurred in addition, renewal or betterment, which results in a substantial increase in an asset's current replacement value, is capitalized. Repair and maintenance costs are recognized as an expense when incurred. Expenditure incurred in addition, renewal or betterment, which results in a substantial increase in an asset's current replacement value, is capitalized. Repair and maintenance costs are recognized as an expense when incurred.

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE  
NOTES TO FINANCIAL STATEMENTS (Continued)  
FOR THE YEAR ENDED SEPTEMBER 30, 2017

2.5 A provision of liabilities

The ASS-RAC Fund recognized when TThe ASS-RAC Fund have a present obligation as a result of a past event, it is probable that on outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

### 3 CASH AND CASH EQUIVALENT ITEMS

	(Unit : Baht)	
	2017	2016
Bank Deposit		
Saving Account	20,264,422.80	19,004,620.47
Total	20,264,422.80	19,004,620.47

### 4 OTHER CURRENT ASSET

	(Unit : Baht)	
	2017	2016
Accrued Income-TU-RAC Subsidy	-	1,157,290.00
Advance	-	1,015.20
Total	-	1,158,305.20

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE  
NOTES TO FINANCIAL STATEMENTS (Continued)  
FOR THE YEAR ENDED SEPTEMBER 30, 2017

**5 BUILDING IMPROVEMENT AND EQUIPMENT- NET**

(Unit : Baht)

	As at 1 October 2016	Additions/ Transfer in	Disposals/ Transfer Out	As at 30 September 2017
<b>Cost</b>				
Building Improvement	1,152,353.56	-	-	1,152,353.56
Office Equipment	525,843.14	2,674.00	-	528,517.14
Equipment	4,296,122.13	55,920.00	-	4,352,042.13
Work in process	1,618,000.00	-	-	1,618,000.00
<b>Total</b>	<b>7,592,318.83</b>	<b>58,594.00</b>	<b>-</b>	<b>7,650,912.83</b>
	As at 1 October 2015	Additions/ Transfer in	Disposals/ Transfer Out	As at 30 September 2016
<b>Accumulated Depreciation</b>				
Building Improvement	(1,036,731.43)	(72,743.95)	-	(1,109,475.38)
Office Equipment	(485,715.75)	(20,272.12)	-	(505,987.87)
Equipment	(3,066,319.51)	(578,237.43)	-	(3,644,556.94)
<b>Total</b>	<b>(4,588,766.69)</b>	<b>(671,253.50)</b>	<b>-</b>	<b>(5,260,020.19)</b>
<b>Net</b>	<b>3,003,552.14</b>			<b>2,390,892.64</b>

Depreciation for the Year Ending 30 September

2017	671,253.50
2016	797,032.18

ASSET COMPENSATION FUND OF THAMMASAT UNIVERSITY  
RESEARCH AND CONSULTANCY INSTITUTE  
NOTES TO FINANCIAL STATEMENTS (Continued)  
FOR THE YEAR ENDED SEPTEMBER 30, 2017

## 6 ACCRUED EXPENSES

	(Unit : Baht)	
	2017	2016
Accrued maintenance system expenses	102,238.50	235,935.00
Accrued website development expenses	48,000.00	120,000.00
Accrued maintenance office equipment	3,638.00	-
<b>Total</b>	<b>153,876.50</b>	<b>355,935.00</b>

## 7 ACCUMULATED REVENUES OVER EXPENSES

	(Unit : Baht)	
	2017	2016
Beginning accumulated revenues over expenses	19,735,810.47	18,813,438.63
<u>Add</u> revenues over expenses	95,356.13	949,145.64
	19,831,166.60	19,762,584.27
<u>Deduct</u> Adjustment accumulated revenues over expenses decrease	-	(26,773.80)
Ending accumulated revenues over expenses	19,831,166.60	19,735,810.47

## 8 OPERATING EXPENSES

	(Unit : Baht)	
	2017	2016
8.1 Depreciation-building Improvement	72,743.95	115,235.52
8.2 Depreciation-office equipment	20,272.12	29,925.29
8.3 Depreciation-equipment	578,237.43	651,871.37
8.4 Equipment maintenance expenses	38,852.50	42,672.00
8.5 Maintenance system expenses	78,645.00	78,645.00
8.6 Loss on write off assets	-	43.00
<b>Total</b>	<b>788,751.00</b>	<b>918,392.18</b>

January

February

March

April

May

June

July

August

September

October

November

December

