

# Project Proposal Writing



## White Elephant Club(WEC) Session ACRS 2023 Taipei

**Kohei Cho, Tokai University**  
The original version was prepared by  
Prof.Gottfried Konecny, University of Hannover

### The funded research budget of Kohei Cho (2009FY~)

Time frame	Sponsor	Theme (Sorry in Japanese)	Budget
2009~2011FY	JST	Decentralized monitoring system for earth environmental education	60,000USD
2012~2016FY	JSPS	Monitoring the environmental recovery of the damaged area using satellite observation and ground survey	91,000USD
2013~2014FY	JST	Resilience against Disasters using Remote Sensing and Geoinformation Technologies for Rapid Mapping and Information Dissemination	84,000USD
2016~2019FY	MEXT	Constructing global monitoring system for safe and secure society	100,000USD
2017~2018FY	JAXA	Maintenance and improvement of sea ice concentration & thin ice area algorithms for AMSR2	154,000USD
2017~2021FY	JSPS	Advancement on monitoring and education of the environmental recovery of the damaged areas using satellite observation and ground survey	892,000USD
2019~2021FY	JAXA	Maintenance and improvement of sea ice concentration & thin ice area extraction algorithms for AMSR2	157,000USD
2022~2024FY	JAXA	Maintenance and improvement of sea ice concentration & thin ice area extraction algorithms for AMSR2 & AMSR3	185,000USD

# Content:

1. What is a Proposal
2. Types of Proposals
3. Types of Contracts
4. Internet resources on writing proposals
5. Contents of a Proposal
6. Evaluation Process
7. Do's and Don't's
8. Example of the Project Proposal

## 1. What is a Proposal?

The purpose of a proposal is to persuade the reader to do something, in most cases **a sponsor to grant or to provide some funds.**

A proposal is a written document to a sponsor.

The sponsor may be **public** or **private.**

**Public** sponsors are:

in the US, the National Science Foundation (NSF),  
in Europe, the EU Research & Innovation, Horizon Europe  
in many countries, the National Research Councils

(e.g. NRC Canada, DFG Germany, etc.)

In Asia, the Asian Development Bank, AIIB, JICA, JST etc.

## Research Project Grant

Operation Guidelines for NSTC Research Grant for University Students(2019) 

Building the Foundation with Technology and Turning Research into Application(2017) 

Operation Guidelines for NSTC Research Project Grants(2017) 

Terms for Hiring Contract Assistants in NSTC-Granted Research Projects(2017) 

NSTC Principles for Handling Research Project Grants(2015) 

Grant Proposal 

## Ministry of Science and Technology

Partnership Program for the Connection to the Top Labs in the World –  
Dragon Gate Program

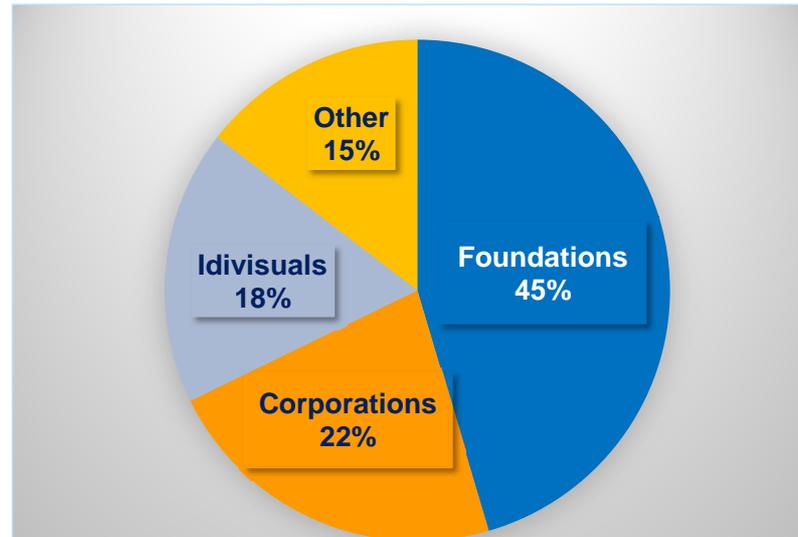
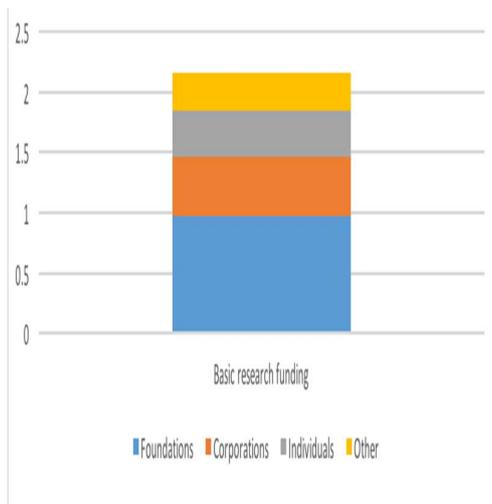
### 1. Being a research team from Taiwan willing to devote the cooperative program in a foreign country

In order to enhance the strength of cooperation, the MOST will select a team of researchers to go abroad and carry out research work in a foreign research institute. The research team, with group member from 2 to 5, consists of one PI, one Co-PI (optional) and one (up to three) Ph.D. student or post-doctoral researcher(s).

### 2. The MOST will cover the required expenses

The MOST will cover the expenses for the round trip airfares, living allowance, insurance as well as the scholarship. The stipends of scholarship are about US\$ 30,000 and US\$ 43,300 per year for each Ph.D. student and post-doctoral researcher, respectively. As for the PI, in addition to the living allowance and round trip air-tickets, the MOST may also provide him/her with funding approved for his/her research work, if any, on a one-time basis. The total funding for research expenses is limited to 4 millions NT dollars (~US \$130,000) per year.

# US Private funding of basic research at universities and colleges by source (2015)



- Foundations : \$979 million (45%)
  - Corporations : \$481 million (22%)
  - individuals : \$382 million (18%)
  - “other” : \$313 million (15%).
- Total : \$2.155 billion

## 2. Types of Proposals:

The sponsor determines the type of the purpose of funding

- **Fundamental research**  
(returns expected in **25 years** – outcome uncertain.  
Mostly funded as **a grant with no obligation**)
- **Applied research**  
(returns expected in **15 years** – outcome predictable)
- **Development project**  
(returns expected in **5 years** – outcome expected)
- **Practical implementation**  
(returns expected on project completion)

<< Proposals have different level of requirement >>

### 3. Types of Contracts:

Applied Research, Development Project and Practical Implementation are

usually funded as **a contract with some particular outcome.**

Public Grants (or Contracts) are

**more regulated** in form or purpose;

applications usually require **prescribed forms.**

The proposals should be between **15 and 100 pages long**

Private Grants (or Contracts) are

usually satisfied with a shorter **“letter proposal”.**

### 4. Internet references for writing proposals

The Internet contains many references for writing project proposals,

most of which are from the US, which even start at fund raising or the finding of a sponsor.

➤ **US** Internet references are:

➤ [www.foundationcenter.org](http://www.foundationcenter.org)

➤ [www.mtsu.edu](http://www.mtsu.edu)

➤ <http://research.microsoft.com>

➤ [www.research.umich.edu](http://www.research.umich.edu)

➤ [www.nsf.gov](http://www.nsf.gov)

[www.cs.uiowa.edu](http://www.cs.uiowa.edu)

➤ [www.tgci.com](http://www.tgci.com)

[www.scn.org](http://www.scn.org)

➤ [www.wpi.edu](http://www.wpi.edu)

<http://grants.library.wisc.edu>

➤ [www.mcf.org](http://www.mcf.org)

[www.gsa.gov/fdac/queryfdac.htm](http://www.gsa.gov/fdac/queryfdac.htm)

[www.jmu.edu](http://www.jmu.edu)

## 4. Internet references for writing proposals

### Non-US Internet References:

<http://ec.europa.eu/research/index.cfm>

<http://scottish-enterprise.com>

[http://ec.europa.eu/research/fp6/index\\_en.cmf?p=0\\_doc](http://ec.europa.eu/research/fp6/index_en.cmf?p=0_doc)

[www.funding.aau.dk/eufund.htm](http://www.funding.aau.dk/eufund.htm)

[www.mdx.ac.uk](http://www.mdx.ac.uk)

[www.education.monash.au](http://www.education.monash.au)

[www.biu.ac.il](http://www.biu.ac.il)

<https://sea-eu.net/object/document/282>

<http://www.arc.gov.au/>

<http://www.southasiafoundation.org>

<http://www.jica.go.jp/english/index.html>

<https://www.adb.org/site/funds/main>

## 5. Contents of a Proposal

### 5.1 Preparation

**Step 1: download application forms and guidelines from the grant webpage**

**Step 2: call a past grantee > ask how he/she got the grant**

**Step 3: call a past reviewer > ask how he/she reviewed**

**Step 4: contact the program officer > ask what is the aim**

# 5. Contents of a Proposal

## 5.2 Proposal Writing

- (1) Abstract - to explain the outline of the proposal
- (2) Introduction
  - who you are
  - goals
  - prove your credibility
  - state the problem
- (3) Problem Statement and Need
  - demonstrate your understanding
  - focus on project
  - relation to larger problems
  - importance of project
  - feasibility to solve the problem
  - aim to be reached

# 5. Contents of a Proposal:

## 5.2 Proposal Writing:

- (3) Objectives - specify the end product
- (4) Methods - clarify the methods / approach
- (5) Evaluation
  - to proof the value of the outcome
  - to improve project
- (6) Budget - to clarify the cost  
**(don't request too much)**

Example: Budget limitation: 50,000USD

Request budget: **49,800USD NG**

**43,000USD Better**

Should show that your budget proposal is reasonable.

## 6. Contents of a Proposal:

< In case of a letter proposal for a **private sponsor** >  
May not need particular forms.  
It should contain a similar but shorter outline.

- (1) Summary
    - self identification
    - uniqueness
    - sponsor expectations
    - budget
  - (2) Sponsor Appeal
    - why to approach this sponsor
  - (3) Problem
  - (4) Solution
  - (5) Capabilities
    - demonstrate credibility
  - (6) Budget
  - (7) Conclusion
- sign by „**heavy weight person**“, to prove the reliability

## 6. Evaluation Process:

As a rule all applications are reviewed by a group of experts.

Why are proposals rejected?

**Problem Statement 58%**

- problem not important
- problem too complex
- only of local significance
- premature

**Approach 75%**

- methods unsuited
- description not clear

**Investigator 55%**

- not sufficient experience
- unfamiliar with literature
- poor publication record

**Other 16%**

## 7. Do's and Don'ts:

- Do:**
- add interesting technology components to proven ideas
  - know how to fit into past and current projects
  - involve a team (with reliable members)
  - proofread the submission carefully

- Don't**
- say little is known or done
  - think you know everything
  - confuse objectives with actions
  - define objectives you do not wish to achieve
  - use abbreviations with no explanation
  - focus on the „cutting edge“
  - request funding for basic operations
  - request too much budget

## 8. Example of Project Proposal



The goal of the CONCERT-Japan Joint Call is to bring together Japanese and European researchers to collaborate on a joint topic of mutual interest.

thematic areas:

1. Efficient Energy Storage and Distribution
2. Resilience against Disasters

# Funding parties

- **Japan: Japan Science and Technology Agency (JST)**
- **Belgium/Flanders: Research Foundation Flanders (FWO)**
- **France: French Ministry of Foreign Affairs (MAE) etc.**
- **Germany/Region of North Rhine Westphalia**
- **Hungary: Hungarian Scientific Research Fund (OTKA)<sup>5</sup>**
- **Italy/Region of Lombardy, □ Italy/Province of Trento**
- **Norway: Research Council of Norway (RCN)**
- **Romania: National Authority for Scientific Research (ANCS)**
- **Slovakia: Slovak Academy of Sciences (SAS)**
- **Spain: Ministry of Economy and Competitiveness (MINECO)**
- **Switzerland: ETH Zurich on behalf of State Secretariat for Education and Research**
- **Turkey: Scientific and Technological Research Council of Turkey (TÜBİTAK)**

## How did we make a proposal?

- One day, Fabio Remondono of Italy found a Joint Call of Concert-Japan and send an e-mail to Kohei Cho for cooperation.
- After few e-mail exchange, they decided to set up an international team consisted of **two scientists from Japan and three scientists from EU Countries**.
- The team exchanged ideas via e-mails and Skype, **we wrote a 18 pages of proposal within three weeks.**
- **The proposal was submitted on October 30, 2012.**
- Total of **53** projects were proposed to the Joint call, and after peer review by JST and EU, **5** was adopted for “**Resilience against Disasters**” including **RAPIDMAP**.

# Our proposal : Rapidmap

Project title: Resilience against Disasters using Remote Sensing and Geoinformation Technologies for Rapid Mapping and Information Dissemination

Project acronym: **RAPIDMAP** Period: **2013-2014**

Project leader for **Japan**

**Kohei Cho** / Tokai University, Japan (overall project leader)

Project leader for **Europe**

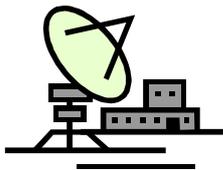
**Emmanuel Baltsavias** / ETH Zurich, Switzerland

Other project partner

**Fabio Remondino** / Fondazione Bruno Kessler, Italy

**Uwe Soergel** / Technical University of Darmstadt,

**Hiroyuki Wakabayashi** / Nihon University, Japan



## Timeline of the project

2012

**October** Proposal submission

2013

**March** Selection of the projects 5/53

**April** Official Contract with funding agencies.

**July** Official Join project started.

**September** Ground survey in Tohoku area.

**October** Presentation at ACRS in Bali

**November** Presentation at ISPRS in Antalya.

2014

**March** Ground survey in Tohoku area.

**May** Presentation at JSPRS in Tokyo

**Sep** Workshop in Tokyo / Ground survey in Tohoku

**Oct** Presentation at ACRS in Ney Pie Tau

**November** JST Joint Workshop in Tokyo

**Final Evaluation** : A

# Proposal: Top page

- **Project title:** Resilience against Disasters using Remote Sensing and Geoinformation Technologies for Rapid Mapping and Information Dissemination
- **Project acronym:** RAPIDMAP
- 
- **Name/institution of project leader for Japan:**
- Kohei Cho / Tokai University (TU), Japan (overall project leader)
- 
- **Name/institution of project leader for Europe:**
- Emmanuel Baltsavias / ETH Zurich (ETHZ), Switzerland
- 
- **Names/institutions of other project partners:**
- Fabio Remondino / Fondazione Bruno Kessler (FBK), Italy
- Uwe Soergel / Leibniz Universität Hannover (LUH), Germany
- Hiroyuki Wakabayashi / Nihon University (NU), Japan

## Proposal: from the second page

### 1. General information

1.1. Short abstract of the project (max. 1/2 page)

1.2. Main Objectives of the project (max. 1/2 page)

1.3. The project description (max. 2pages)

1.4. Scientific excellence of the project and the project partners (*max. 1page*)

1.5. Project coordination and management (*max. 1 page*)

2. Work plan (*max. 1 page per aspect below*)

2.1. Research methodology

2.2. Work plan (timetable / Gantt chart)

2.3. Envisaged types of activities (including main milestones, deliverables and place in case of events)

2.4. Involvement of each partner

3. Expected impact of project results (*max. 1page*)

4. Added values of multilateral cooperation (*max. 1page*)

5. Short CVs of main participating researchers (*max. 1 page per researcher*)

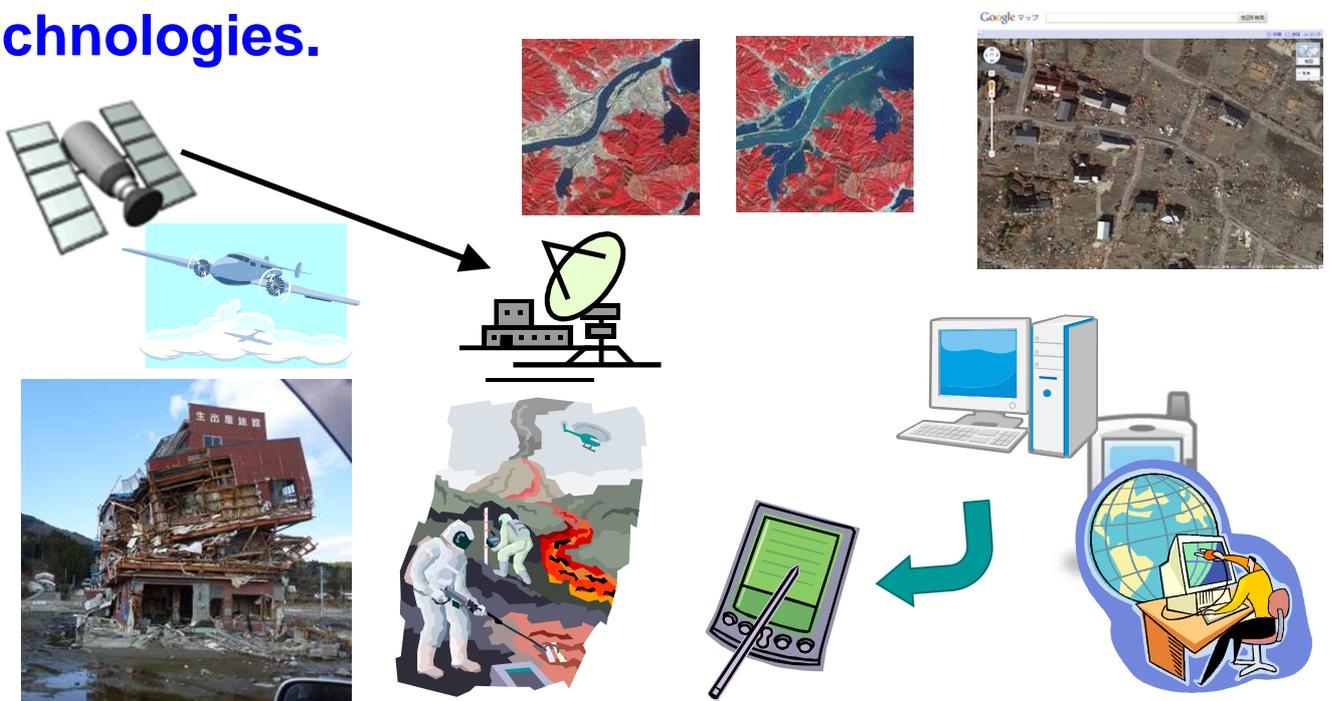
# 1. General information

## 1.2. Main Objectives of the project (max. 1/2 page)

One of the most important things in the beginning of a disaster is to figure out its damages for search and rescue as well as activities coordination. **The main objectives of the *RAPIDMAP* project are to construct practical ways to gather and extract useful information to figure out the damages of disaster in near real time by utilizing RS and GIS technologies.** Disaster response requires indeed rapid mapping from as many information sources as possible and an easy access to such information. With respect to RS, this means, firstly, to deal with imagery from diverse sensors which capture complementary data in different spectral and spatial domains (e.g., visible and microwave, from space to ground) and, secondly, to compare pre- and post-event imagery in order to detect relevant changes. In any case, a very precise co-registration of the data is a prerequisite to enable information extraction and rapid delivery of data to policy makers and rescue teams. In the *RAPIDMAP* project, novel, reliable and robust methodologies will be developed in order to achieve the aforementioned goals using high-resolution satellite, airborne, UAV and terrestrial data. For the rapid information delivery, *RAPIDMAP* will develop WebGIS tools to provide integrated information to end-users using wireless network and portable terminals in near real time. The project will be practically tested and demonstrated at the Tohoku area in Japan and the Emilia region in Italy, which were recently affected by large disasters. Through these demonstrations, the importance of cooperation between Japan and EU countries will be enhanced.

### <Main objective>

**The main objectives of the *RAPIDMAP* project are to construct practical ways to gather and extract useful information to figure out the damages of disaster in near real time by utilizing RS and GIS technologies.**



## 2. Work plan

### 2.2. Work plan (timetable / Gantt chart)

See additional information in 2.3.

<b>WP 1: Management</b>	
Lead: TU, Partners: ETHZ, FBK, LUH, NU	Start month: 1, End month: 24
Tasks: - Activity planning and monitoring - Quality assurance of deliverables	
<b>WP 2: Near real time monitoring</b>	
Lead: TU, Partners: NU, FBK	Start month: 1, End month: 18
Tasks: - Image receiving and processing - UAV platform exploitation	
<b>WP 3: Data co-registration</b>	
Lead: ETHZ, Partners: LUH, NU	Start month: 1, End month: 23
Tasks: - Co-registration between optical and radar images (before, after the disaster) - Co-registration between different spectral optical bands (before, after the disaster) - Co-registration of UAV images with other geodata	
<b>WP 4: Data fusion and change detection</b>	
Lead: LUH, Partners: ETHZ, TU	Start month: 4, End month: 22
Tasks: - Fusion of data at feature / object / semantic level - Detect changes from same and different sensor type (same/different view) - Investigate useful object features for change detection	

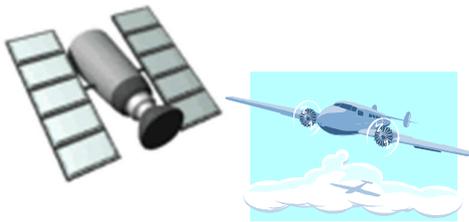
## 2. Work plan

### Time Chart

		2013												2014												2015		
		apr	may	jun	jul	ago	sep	oct	nov	dec	jan	feb	mar	apr	may	jun	jul	ago	sep	oct	nov	dec	jan	feb	mar			
WP1	management																											
WP2	near real time monitoring																											
WP3	data co-registration																											
WP4	data fusion and change detection																											
WP5	decision support system (webGIS)																											
WP6	data collection and benchmark tests																											
WP7	dissemination																											

## 2.4. Involvement of each partner

1. Near real time monitoring with satellites as well as Unmanned Airborne Vehicles (UAV). [Japan]
2. Co-registration of various images as well as maps coming from different sources. [Switzerland]
3. Data fusion and change detection using optical sensor data and active microwave [Germany]
4. Decision Support System (DSS) development based on WebGIS technologies [Italy]



## 5. Short CVs of main participating researchers

### Personal data

Name	Kohei Cho, Prof. Dr.
Institution	Tokai University, School of Information and Science & Technology
Address	4-1-1 Kitakaname Hiratsuka, Kanagawa 259-1292, Japan
Phone / Fax	+81-463-58-1211 / +81-463-50-2426
E-Mail / WWW	<a href="mailto:cho@yoyogi.ycc.u-tokai.ac.jp">cho@yoyogi.ycc.u-tokai.ac.jp</a> / <a href="http://www.tric.u-tokai.ac.jp">www.tric.u-tokai.ac.jp</a>

### Scientific Career and Education

since 04/2002	Professor, Dept. of Human & Information Science, Tokai Univ., Japan
04/1994-03/2002	Associate Professor, Dept. of Network & Computer Engineering, Tokai Univ.
09/1992-03/1994	Researcher, Department of Network & Computer Engineering, Tokai University, Japan
04/1982-03/1992	Researcher, Remote Sensing Technology Center of Japan (RESTEC)
03/1981	MSc, Chiba Univ.

### Activities in scientific community

2009- : General Secretary AARS

2008-2012: Scientific Secretary, ISPRS Commission VIII “ Remote Sensing Application)

2004-2008: President, ISPRS Commission VI “Education and Outreach”

1992-2000: Chair ISPRS WG VI/2 “Computer Assisted Teaching”

# 5. Short CVs of main participating researchers

## Selected publications (peer-review papers only)

1. Cho K, Yokotsuka H, Shimoda H and Matsumae Y (2012), "A study on Near Real Time Monitoring with Earth Observation Satellites", Proc. of the School of Information Science and Technology, Tokai University, Series J, pp. 3-1.
2. Toyota T, Ono S, Cho K, Ohshima K (2011), "Retrieval of sea-ice thickness distribution in the Sea of Okhotsk from ALOS/PALSAR backscatter data", Annals of Glaciology, Vol. 52, No. 57, pp. 177-184.
3. Yaguchi R, Cho K (2009), "Validation of sea ice drift vector extraction from AMSR-E and SSM/I data by using MODIS data", Journal of the Remote Sensing Society of Japan, Vol.29, No. 1, pp. 242-252.
4. Fukue K, Sone M, Yokotsuka H, Cho K, Shimoda H (2009), Influence of radiometric density noise and geometric position noise in reconstruction based superresolution, Journal of the Japan Society of Photogrammetry and Remote Sensing, Vol. 48, No. 6, pp. 289-298.
5. Yokotsuka H, Fukue K, Sone M, Cho K, Matsuoka R, Sudo N, Shimoda H, Matsumae Y (2006), "A Proposal on Antenna Alignment Calibration Method of a Receiving Ground Station for Earth Observation Satellite", The transaction of the Institute of Electrical Engineers of Japan. C, A publication of Electronics, Information and System Society, Vo. 126, No. 1, pp. 14-23

## Way of Comparison (Kadowaki Primary School)

**Observation Height**

**Terminal Development**

# Rapidmap Terminal



Satellite image of before



Satellite image of after

# Rapidmap Terminal



Photo Before



Photo After

# Ground survey at Sendai



# RAPIDMAP Workshop in Tokyo(sep. 2014)



# Rapidmap Workshop



## Summery

- **To do good science, a scientist needs certain money.**
- **Project Proposal is a written document to a sponsor for getting funding.**
- **For getting funding, writing good proposal is necessary.**
- **The followings must be included in a good proposal.**
  - **Clear objective and vision**
  - **Clear and promising methodology**
  - **Evidence of the ability of the scientist**
  - **Preparation for the project**
- **Writing good proposal is the key to become a good scientist.**