

Applied Spatial Information Science III: An Introduction to Community Security Checks Using “Kiki-Gaki Map”

Yutaka HARADA
National Research Institute of Police Science

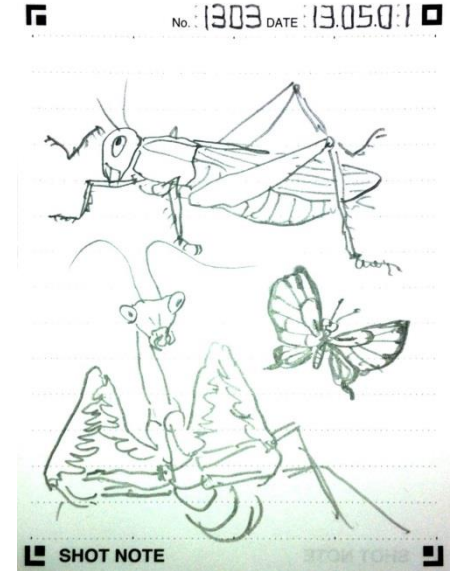
Self Introduction

- Yutaka HARADA, Ph. D.

- ▶ is specially appointed researcher at the Crime Prevention Section, National Research Institute of Police Science.
- ▶ His major research interest is in the analysis of spatial and temporal patterns of crime and longitudinal analysis of delinquency careers among juveniles.
- ▶ He received a B. A. degree from University of Tokyo and a Ph. D. degree in criminology from the University of Pennsylvania.



Self Introduction (Cont'd)



Introduction to the NRIPS

- ▶ A Research Institute attached to the National Police Agency of Japan
- ▶ First founded in 1948
- ▶ Staffed with approximately 100 researchers
- ▶ Consists of 6 research departments, plus 2 Centers

National Research Institute of Police Science

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[Site Map](#)

National Research Institute of Police Science National Research Institute of Police Science <ul style="list-style-type: none"> ▶ Organization ▶ Activity ▶ Location 	First Department of Forensic Science First Department of Forensic Science <ul style="list-style-type: none"> ▶ First Biology Section ▶ Second Biology Section ▶ Third Biology Section ▶ Fourth Biology Section ▶ Fifth Biology Section 	Second Department of Forensic Science Second Department of Forensic Science <ul style="list-style-type: none"> ▶ Physics Section ▶ Fire Investigation Section ▶ Explosion Investigation Section ▶ Mechanical Section 	Third Department of Forensic Science Third Department of Forensic Science <ul style="list-style-type: none"> ▶ First Chemistry Section ▶ Second Chemistry Section ▶ Third Chemistry Section ▶ Fourth Chemistry Section ▶ Fifth Chemistry Section
	Fourth Department of Forensic Science Fourth Department of Forensic Science <ul style="list-style-type: none"> ▶ First Information Science Section ▶ Second Information Science Section ▶ Third Information Science Section 	Department of Criminology and Behavioral Sciences Department of Criminology and Behavioral Sciences <ul style="list-style-type: none"> ▶ Juvenile Section ▶ Crime Prevention Section ▶ Investigation Support Section 	Department of Traffic Science Department of Traffic Science <ul style="list-style-type: none"> ▶ First Traffic Science Section ▶ Second Traffic Science Section ▶ Third Traffic Science Section
	Identification Center Identification Center <ul style="list-style-type: none"> ▶ Identification Center 	Training Center of Forensic Science Training Center of Forensic Science <ul style="list-style-type: none"> ▶ Training Center of Forensic Science 	

Department of Criminology and Behavioral Sciences

- Juvenile Section
 - Cause of Delinquency
 - Guidance / Training
- Crime Prevention Section
 - Community and Crime
 - Spatial Analysis of Crime
- Investigation Support Section
 - Offender Profiling
 - Investigative Psychology



Course Description

- “An Introduction to Community Security Checks Using ‘Kiki-Gaki Map’ ”
 - ▶ “Kiki-Gaki Map” is an easy-to-use software tool for recording the process and findings of field observations, in a systematic and objective manner (Harada et al. 2011). With the aid of this tool, you can easily record such pieces of information as the route you took in the course of security check town walk, the pictures you took on site, and the voice-recorded field notes, in the form of geospatial data, so that you may make use of them as resource materials for a variety of analyses and studies.
 - ▶ This course aims to provide hands-on learning opportunities on such topics as scientific and technological bases of this software tool including spatial information science and satellite positioning, the relationship with the lecturer’s proposal of “preventive criminology,” and potential applications to fieldwork in various settings.

Course Objectives and Prerequisite

- Course Objectives:

- ▶ To understand the scientific and technological bases and the concept of “preventive criminology,” through the hands-on learning of the “Kiki-Gaki Map.”
- ▶ To understand the methods of analyses and the manner of utilization of the data recorded with the “Kiki-Gaki Map.
- ▶ To develop basic skills to acquire and analyze geospatial data of your own, based on the basic knowledge and practical applications.

- Prerequisite:

- ▶ It is desirable (but NOT mandatory) to have basic skills and experiences of personal computer applications such as word processors and spreadsheets.

Introductory Video: “Kashi-ken!”



Source: “The Kashiwa City Research Institute”: #46.

Made by the City of Kashiwa, 2016/05/16

<http://www.city.kashiwa.lg.jp/soshiki/020300/p035201.html>

Introductory Video: “Kashi-ken!”



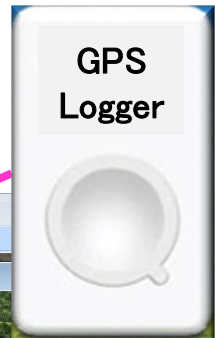
Source: “The Kashiwa City Research Institute”: #46.

Made by the City of Kashiwa, 2016/05/16

<http://www.city.kashiwa.lg.jp/soshiki/020300/p035201.html>

“Kiki-Gaki Map” (Listen-Write Map)

A Software Tool that Helps Creating Spatial Datasets of Field Observations for the Purpose of Accident/Victimization Prevention



- Finds out oral comments that correspond to a photo from the **continuous sound data**, by making use of the **shooting date and time of the photo** as a search key, so that one can easily **take memos** of the comments.
→ Can be used in various activities for “learning about the community.”

Background: Calls for Improved School Safety

3. 通学路安全マップの作成

児童生徒等に対し、通学路の安全マップを作成させることは、安全の問題を自分たちの生活空間と関連付けて具体的に考えさせる教育として非常に有効である。児童生徒等が自ら危険を予測し、回避することができるようにするためにも通学路の安全マップの作成及び活用を促進すること。

4. 家庭や地域の関係機関・団体との会議の開催

学校においては、児童生徒等の安全を確保するために、児童生徒等の保護者との連携を図るとともに、当該学校が所在する地域の実情に応じて、当該地域を管轄する警察署その他の関係機関、地域の安全を確保するための活動を行う団体その他の関係団体、当該地域の住民その他の関係者との連携を図る必要がある。

児童生徒等に通学路安全マップを作成させましょう！

通学路安全マップの作成は、安全の問題を自分たちの生活空間と関連づけて考えさせる上で有効です。

児童生徒等が自ら危険を予測し、回避することができるようにするためにも、通学路安全マップの作成・活用を促進しましょう。



○ 児童生徒への通学路安全マップの作成指示の状況（小学校等及び中学校等）

	平均	国立	公立	私立
H23年度実績	85.1%	56.8%	86.5%	44.8%
H25年度実績	51.4%	23.1%	52.5%	19.6%

家庭や地域の関係機関・団体との連携を図りましょう！

児童生徒等の安全は、学校だけでは確保できません！

児童生徒等の保護者との連携を図るとともに、警察や関係機関、地域の住民と連携を図るために、会議を開催することが有効です。



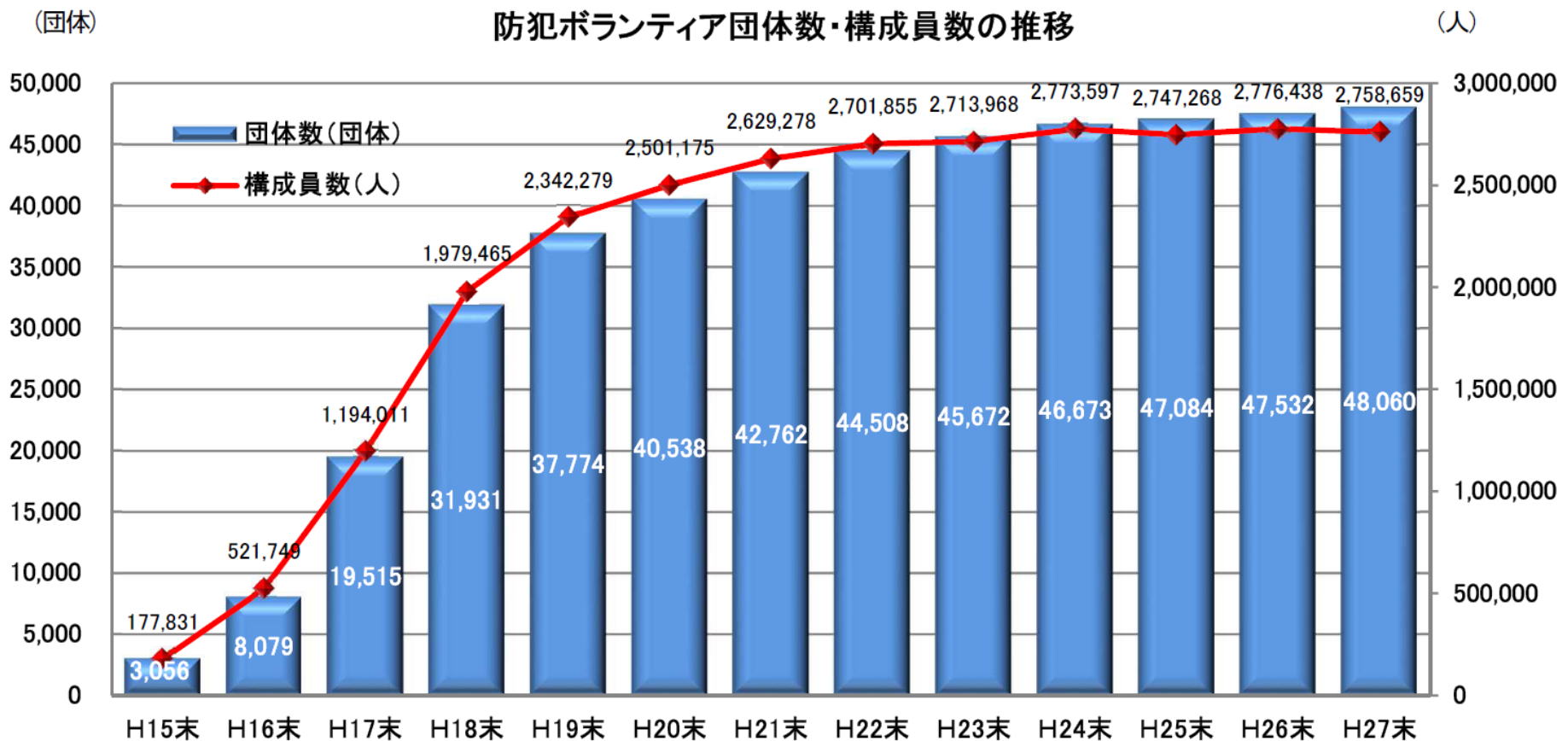
○ 協力要請や情報交換を行うための会議を開催している学校

	平均	国立	公立	私立
H23年度実績	76.3%	70.0%	86.0%	38.7%
H25年度実績	85.3%	85.4%	92.8%	55.5%

出典：文部科学省スポーツ・青少年局学校健康教育課長「学校安全に関する更なる取組の推進について（依頼）」
（平成27年3月31日）

- Request schools to “develop and utilize safety maps of school commuting roads.”

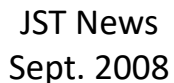
Trends in Crime Prevention Volunteer Groups and Their Members



Source: National Police Agency (2016/03/18)

<https://www.npa.go.jp/safetylife/seianki55/news/doc/seianki20160318.pdf>

- Research project funded by Research Institute of Science and Technology for Society (RISTEX), Japan Science and Technology Agency (JST) (FY 2007 through 2011)



Safety Check Mapping in Chichibu

- 2015/05/17
- Hosted by Chichibu City Safe Community Promotion Committee, etc.
- Groups 4-6 used “Kiki-Gaki-Map” :
 - ▶ Maps **printed** using 2 mobile printers
 - ▶ 3 maps **with priority of issues**, created in approx. **1 hour 15 minutes**



Fieldwork by Elementary School Students (2015/10/30)

まちなるき記録作成支援ツール『聞き書きマップ』 - マイデフォルトマップ

ホーム 表示 ツール 表示設定 まちなるき記録作成支援ツール

まちなるき記録作成支援ツール

1. 時報を表示する
2. データを読み込む
3. 音声を聞いてメモにする
4. 結果を...

2015/10/30 9:33:36 IMG_0527.JPG

メモ欄

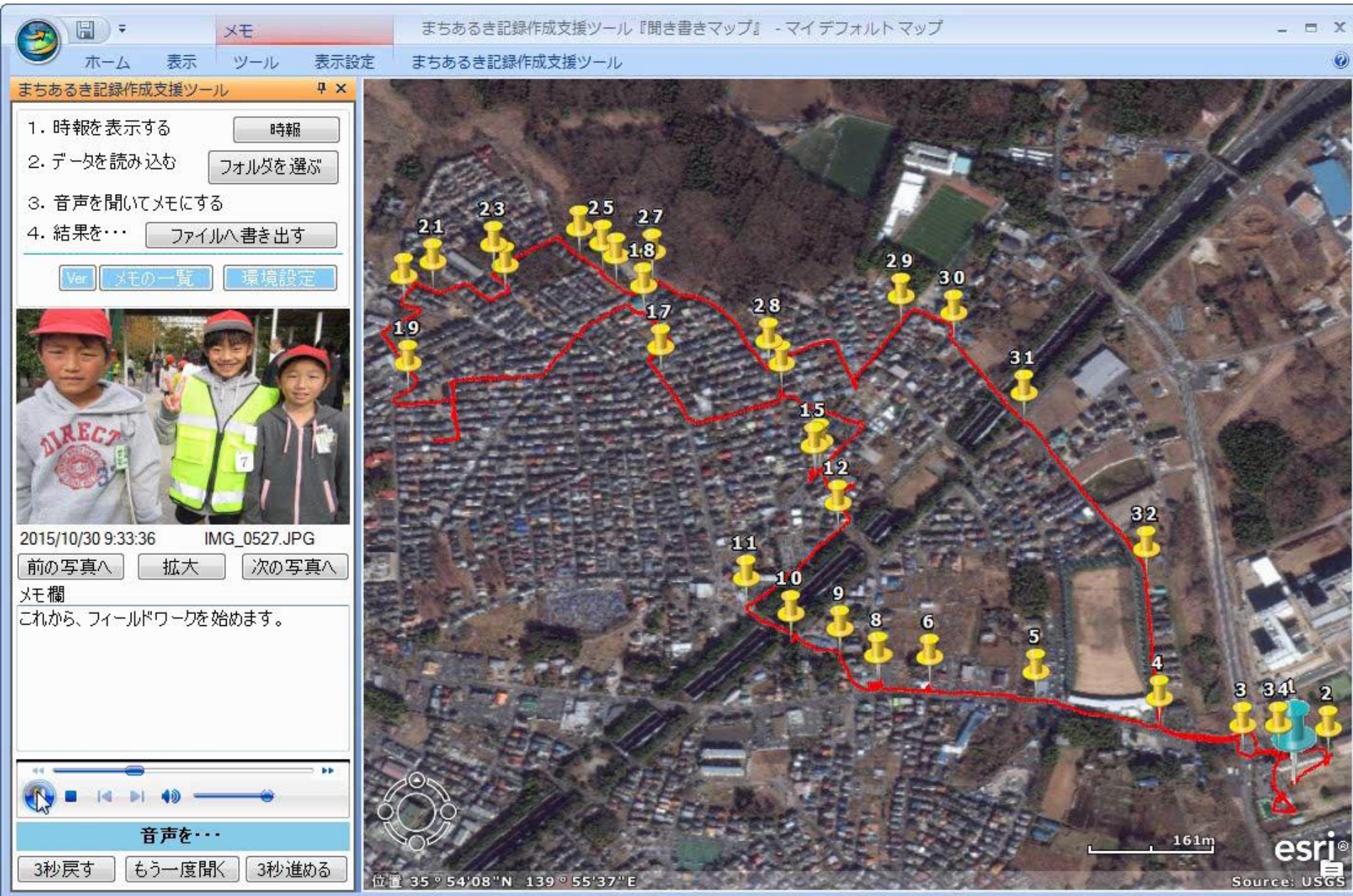
これから、フィールドワークを始めます。

音声...

位置 35°54'08"N 139°55'37"E

161m

esri® Source: USGS



A Test in Bangkok (2014/09/23)

The screenshot displays a web application titled "まちあるき記録作成支援ツール『聞き書きマップ』 - kgm222_bangkok_hotel2uncc". The interface is in Japanese and includes a sidebar with navigation links (ホーム, 表示, ツール, 表示設定) and a main content area. The sidebar contains a list of steps for creating a commute record:

1. データを読み込む (Load data) with buttons for "フォルダを選ぶ" (Select folder) and "前回情報を読み込む" (Load previous information).
2. 時刻合わせを... (Adjust time...) with buttons for "する" (Do) and "しない" (Don't).
3. 音声を聞いてメモにする (Listen to audio and create a memo).
4. 結果を... (Result...) with a button for "ファイルへ書き出す" (Export to file).

Below the steps are buttons for "メモの一覧" (Memo list) and "環境設定" (Environment settings). A photo of a black car is shown with the timestamp "2014/09/23 10:02:24". Below the photo are buttons for "前の写真へ" (Previous photo), "拡大" (Enlarge), and "次の写真へ" (Next photo). A text box contains the following information:

メモ欄
タイのセンタラ・グランドホテル前です。
44の番号のある大使館の車が迎えに来てくれています。

At the bottom of the sidebar are audio controls with a play button, a volume slider, and buttons for "3秒戻す" (Rewind 3 seconds), "もう一度聞く" (Listen again), and "3秒進める" (Play 3 seconds). The main content area shows a satellite map of Bangkok with a red line indicating a commute route. The route starts at a location marked with a red pin, goes to a stadium, then to a location marked with a red pin, then to a location marked with a red pin, and finally to a location marked with a red pin. The map includes a scale bar (384m) and the Esri logo. The coordinates at the bottom are 13°45'18"N 100°31'24"E.

Commuting Route from Hotel to UNCC; Pictures Taken from Inside a Car.¹⁶

A Two-column List of Cards: Bangkok Data



2014/09/23 10:02:24
タイのセンタラ・グラントホテル前です。
44の番号のある大使館の車が迎えに来てくれています。



2014/09/23 10:12:43
けっこう渋滞しています。



2014/09/23 10:21:40
ホテルのある一角からちょっと外れると、庶民の生活があります。



2014/09/23 10:22:16
この辺にもキャッシュディスペンサーがあります。



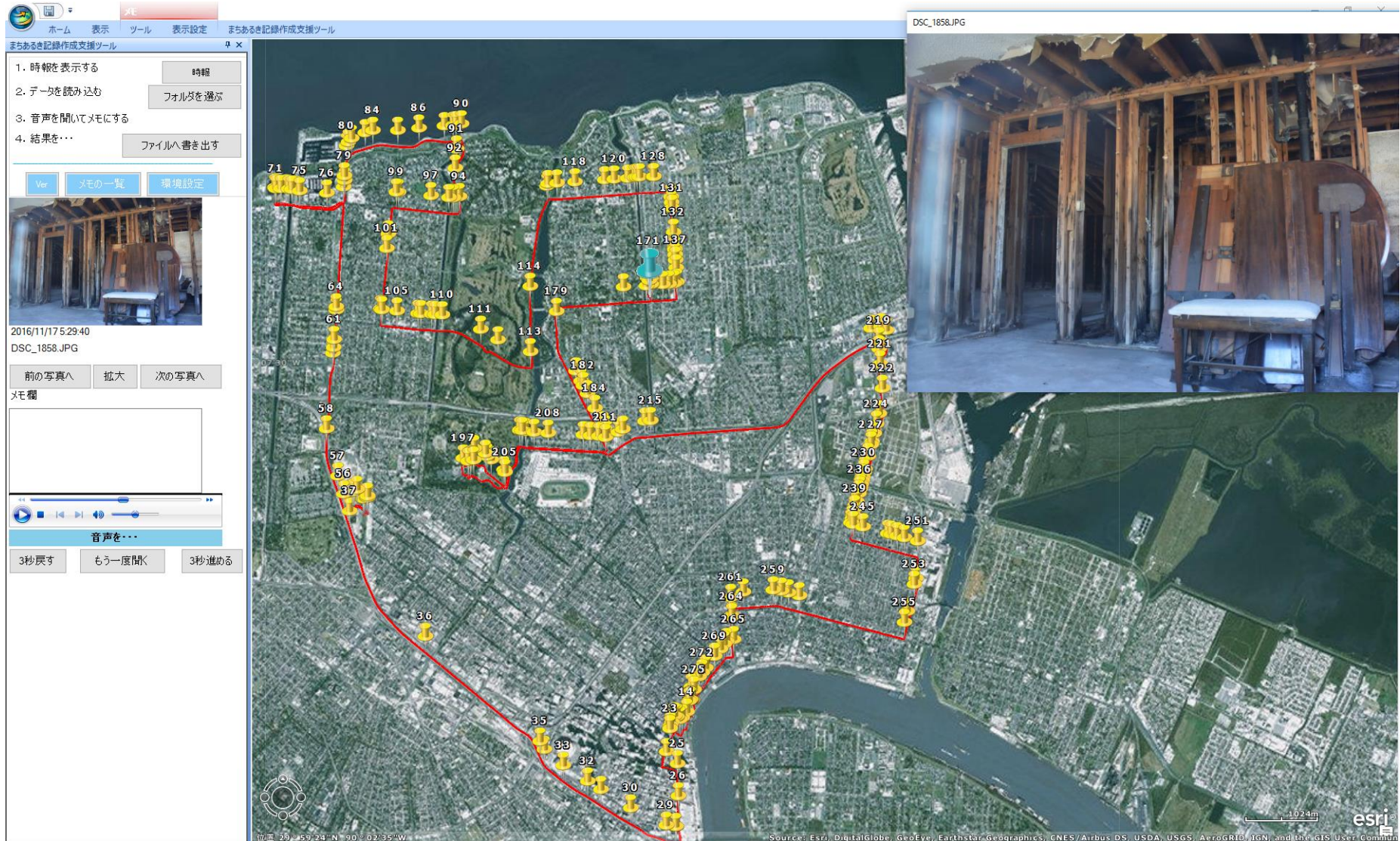
2014/09/23 10:29:20
国連の建物に着いたようです。



2014/09/23 10:31:12
これで終わりたいと思います。
UNCCエントランスこちらです。

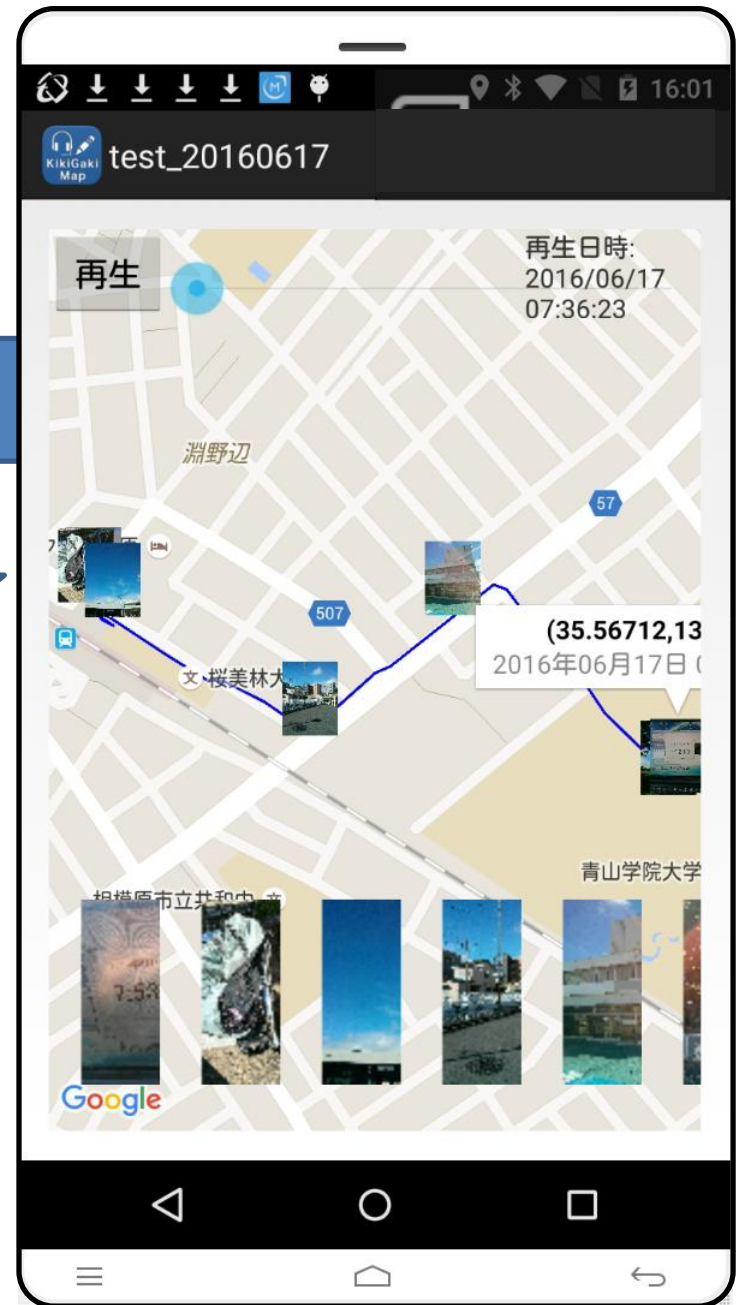
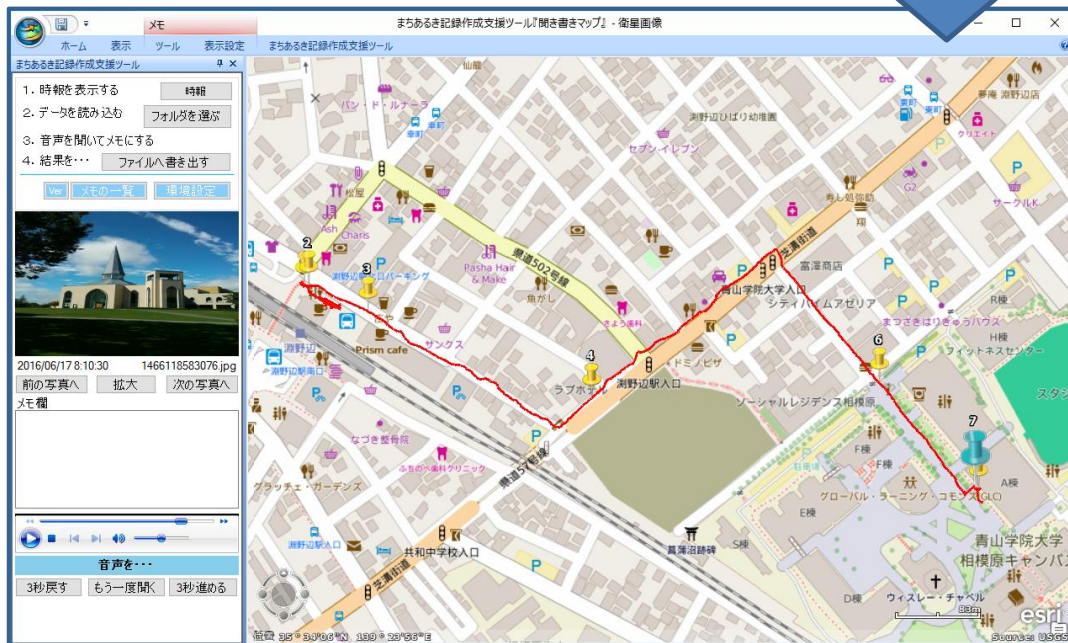
2014/09/23

Even Further Application...



In Order to Achieve More Widespread Use...

- Developing Smartphone (Android OS) Application
 - ▶ Functionality of GPS Logger, IC Recorder, Digital Camera with a single device!
- Easy to Cooperate with PC ♪



Giving the Outcomes Back to Society

- Website “Prevention of Childhood Victimization based on Scientific Research”
- Give back to the grass-root efforts for protecting children:
 - Scientific and easy-to-understand **theory** and
 - User-friendly **tools**
 - **For free** (at least for **end users**)
- Currently managed by: “Council for the Promotion of Preventive Criminology (CPPC)”

<http://www.skre.jp/>

Skre.jp 科学が交える子どもの被害防止

訪問者 000101057 人目



子どもの日常行動調査マニュアル 危険なできごと調査マニュアル

マニュアルの最新版はこちら



まちあるき記録作成支援ツール
『聞き書きマップ』
バージョン3

メニュー

トップページ

- ・ skreからのお知らせ
- ・ このHPについて
- ・ 理論を知る
- ・ 被害を知る 子どもを知る
- ・ 情報を分析する
- ・ 対策を考える
- ・ マニュアルダウンロード
- ・ サイトマップ
- ・ お問い合わせ
- ・ 予防犯罪学推進協議会
- ・ 研究実績

リスクを知って、無理のない対策へ



理論を知る

被害を知る 子どもを知る

情報を分析する

対策を考える

お知らせ

Skre.jpからのお知らせ

1 2 3 4 5 次 ▶ カテゴリ選択 ▼ 5件 ▼

■ 2017/03/25 地理空間情報活用推進基本計画（第3期）が閣議決定されました。

昨日（3月24日）付けで、国の「地理空間情報活用推進基本計画（第3期）」が閣議決定されました。

その第22ページに、つぎの記述があります。

「また、GISの活用により、犯罪を未然に予防し、被害の拡大を防止するため、犯罪の時空間的な集積・変化の分析手法、犯罪抑止対策の評価手法、防犯活動の支援手法の開発を行うなど、事案対処手法の高度化・防犯活動の支援を促進する。」

「犯罪の未然防止」や「防犯活動の支援」などを促進すべきことが、このような国の基本計画に盛り込まれたのは、画期的なことだと思います。

CPPC

予防犯罪学推進協議会
Council for the Promotion of Preventive Criminology

Looking Forward: the Quazi-Zenigh Satellite System

Japanese satellite
positioning
system scheduled
for year 2018

Source:
QZSS Service Inc.
Homepage

The screenshot shows the official website of the Quasi-Zenith Satellite System (QZSS) Service. The browser address bar displays 'http://www.qzs.jp/en/'. The page features a dark blue header with the title 'Quasi-Zenith Satellite System (QZSS) Service' and a search bar. A left-hand navigation menu includes links to Home, Service Overview, User Guide, Technology, Events, Contact Us, Company Information, and Related Links. The main content area is titled 'Leading the way towards a new society with QZSS' and features a large, colorful illustration of a cityscape with various transportation modes. Callout boxes identify these modes: 'Automobiles (Logistics and Passenger Transport)' with a truck icon, 'Automobiles (Navigation)' with a car icon, 'Railways' with a train icon, 'Personal Use' with a person on a bicycle icon, 'Construction and Agriculture' with a building and plant icon, and 'Ships and Aircraft' with a ship and airplane icon. Below the illustration, a paragraph explains that QZSS makes satellite positioning services easier to use and more precise, even in areas where signals from other satellites did not reach. A section titled 'The environment related to satellite positioning services' discusses the widespread use of navigation functions in everyday life and the challenges of current GPS services. The page also includes a 'Download PDF' section with a brochure and an 'Illustration (JPEG)' section with a detailed diagram of the QZSS system.

http://www.qzs.jp/en/ Quasi-Zenith Satellite S...

Quasi-Zenith Satellite System (QZSS) Service

Google Custom Search Japanese

- Home
- Service Overview
- User Guide
- Technology
- Events
- Contact Us
- Company Information
- Related Links

Leading the way towards a new society with QZSS

Automobiles (Logistics and Passenger Transport)

Automobiles (Navigation)

Railways

Personal Use

Construction and Agriculture

Ships and Aircraft

These days, in their everyday lives people confirm positions using signals from satellites, and also search for routes to their destinations. QZSS makes satellite positioning services even easier to use and more precise. This system can be used even in locations where positioning signals from satellites did not reliably reach in the past.

The environment related to satellite positioning services

Navigation functions—such as those used in car navigation systems, smartphones, and mobile phones—have come into widespread usage because they are very convenient. These convenient functions use positioning signals from satellites for satellite positioning services that make it possible to detect your current location. These services are also used in fields such as land surveying, disaster prevention, etc.

However, current satellite positioning services utilize GPS satellites operated by the United States. Due to reasons such as the small number of satellites in the field of vision, services have not always been offered in a stable way in all locations.

Lecture Plans

Lecture #1	What is “Kiki-Gaki Map?” (1): designs and functions of KGM; backgrounds and purposes of development; introduction of applications; aims and plans of the course
Lecture #2	What is “Kiki-Gaki Map?” (1): useful for what and how; relationship with spatial information science; relationship with “preventive criminology”; efforts to bridge research and practice
Lecture #3	Scientific Bases of “Kiki-Gaki Map” (1): spatial information sciences; geographic information systems; GPS and “Quasi-Zenith Satellite System”; the era of open data and open sources
Lecture #4	Scientific Bases of “Kiki-Gaki Map” (2): what is “preventive criminology”; two approaches in medical research; “developmental” and “situational” crime prevention
Lecture #5	Basic Operations and Applications (1): things to be prepared; installing the software; initial settings for convenient use

Lecture Plans

Lecture #6	Basic Operations and Applications (2): preparations by the day before fieldwork; conducting fieldwork; importing data and doing 'Kiki-Gaki'
Lecture #7	Basic Operations and Applications (3): printing data; paper-based map-making; points to remember for effective utilization
Lecture #8	Basic Operations and Applications (4): exporting data to external file; importing to general-purpose GIS; one-step further visualization and analysis
Lecture #9	Practical Applications (1): [case example] “model operation of practical safety education” at elementary schools; achievements and challenges; [practice] presentation and discussion of students' own work
Lecture #10	Practical Applications (2): [case example] “training course for the development of next-generation volunteer leaders”; achievements and challenges; [practice] presentation and discussion of students' own work

Lecture Plans

Lecture #11	Practical Applications (3): [case example] uncovering and disseminating buried sight-seeing information through the collaboration with local volunteers; achievements and challenges; [practice] presentation and discussion of students' own work
Lecture #12	Practical Applications (4): [case example] examining the improvement of positioning accuracy of the Quasi Zenith Satellite System; achievements and challenges; [practice] presentation and discussion of students' own work
Lecture #13	Directions for Further Developments (1): “integrated toolkits” with the cooperation with WebGIS; developing a smart phone version; safety education model operation for 2017
Lecture #14	Directions for Further Developments (2): Developing “Quasi-Zenith” compatible device; creating mechanisms for “social implementation”; toward a system of spatial data acquisition for the compilation and utilization of "local knowledge"
Lecture #15	Conclusions and Future Prospects: the importance of “input” system; combining “narrative” information with geospatial information; providing items of practical use; toward creating an “ecosystem of co-creation”